

THE 1420
NAUTICAL ALMANAC

AND

ASTRONOMICAL EPHEMERIS,

For the Year

1795.

Published by ORDER of the

COMMISSIONERS OF LONGITUDE.



Printed by WILLIAM RICHARDSON, Printer;

AND

Sold by P. ELMSLY, Strand, Bookfeller to the said COMMISSIONERS.

M DCC XC.

[Price Three Shillings and Sixpence.]

EXTRACT from the ACT of PARLIAMENT
concerning the Longitude, made in the Fifth
Year of the Reign of His present Majesty.

WHEREAS the Publication of Nautical Almanacs constructed by proper Persons, under the Direction of the said Commissioners, would greatly contribute to make the said Lunar Tables more generally useful; Be it further Enacted, by the Authority aforesaid, That it shall and may be lawful to and for the said Commissioners to cause such Nautical Almanacs, or other useful Tables, to be constructed, and to print, publish, and vend, or cause to be printed, published, and vended, any Nautical Almanac or Almanacs, or other useful Table or Tables, which they, or the major Part of them, shall, from time to time, judge necessary and useful, in order to facilitate the Method of discovering the Longitude at Sea; any Law, Statute, exclusive Privilege, private Charter, or other Custom, to the contrary thereof notwithstanding.

And be it Enacted, by the Authority aforesaid, That no Person or Persons shall print, publish, or vend, or cause to be printed, published, or vended, any Nautical Almanac or Almanacs, or other Table or Tables constructed under the Direction of the said Commissioners, without being first licensed by the said Commissioners, or the major Part of them: And if any Person or Persons not so licensed, or not being authorised by the Person or Persons so licensed by the said Commissioners, shall print, publish, or vend, or cause to be printed, published, or vended, any such Nautical Almanac or Almanacs, or other Table or Tables, every such Person or Persons shall, for every Copy of such Nautical Almanac or Table so printed, published, or vended, forfeit and pay the Sum of Twenty Pounds; to be recovered by Action of Debt, Bill, Plaint, or Information, in any of His Majesty's Courts of Record at *Westminster*; and that One Moiety of such Penalty and Forfeiture shall be to His Majesty, his Heirs and Successors, and the other Moiety to him or them that shall prosecute, inform, or sue for the same,



EXTRACT of an Act for the Repeal of all former Acts concerning the Longitude at Sea, except so much thereof as relates to the Appointment and Authority of the Commissioners thereby constituted, and also such Clauses as relate to the constructing, printing, publishing, vending, and licensing of Nautical Almanacs and other useful Tables; and for the more effectual Encouragement and Reward of such Person and Persons as shall discover a Method for finding the same, or shall make useful Discoveries in Navigation; and for the better making Experiments relating thereto: Made in the Fourteenth Year of the Reign of His present Majesty.

BE it Enacted by the KING's Most Excellent Majesty, by and with the Advice and Consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the Authority of the same, That each and every of the said recited Acts (save and except such Clause and Clauses in each or any of them as relate to the Appointment or Authority of all or any of the Commissioners thereby respectively constituted, and also such Clause and Clauses as relate to the constructing, printing, publishing, vending, and licensing of Nautical Almanacs, and other useful Tables) shall, from and after the Twenty-fourth Day of *June* One thousand Seven hundred and Seventy-four, be, and are hereby repealed.

And, for a due and sufficient Encouragement to any Person or Persons who shall discover any Method or Methods for finding the said Longitude, Be it Enacted by the Authority aforesaid, That the First Author or Authors, Discoverer or Discoverers, of each and every such Method or Methods, his or their Executors, Administrators, or Assigns, shall be intitled to and have the Rewards or Sums of Money herein-after mentioned; that is to say, In case the Method proposed shall be, by means of a Time-keeper, the Principles whereof have not hitherto been made public, to the Reward or Sum of Five Thousand Pounds, if such Method determines the said Longitude to One Degree of a great Circle, or Sixty geographical Miles; to the Reward or Sum of Seven thousand Five hundred Pounds, if it determines the same to Two Thirds of that

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Distance; and to the Reward or Sum of Ten thousand Pounds, if it determines the same to One Half of the said Distance: Which respective Rewards shall be due and paid when such Method shall have been sufficiently tried by the following Experiments and Voyages to be made and performed by such Persons, and under such Restrictions, as the said Commissioners for the Discovery of Longitude at Sea respectively constituted by the above-recited Acts, or the major Part of them, shall think fit to appoint and direct; (that is to say), When and so soon as Two or more Time-keepers of the same Construction shall have been tried at the same Time, for the Space of Twelve Months, at the Royal Observatory at *Greenwich*, then in Two Voyages round the Island of *Great Britain*, in contrary Directions, and in such other Voyages to different Climates as the said Commissioners shall think fit to direct and appoint; and after their Return from such Voyages, or any of them, for such longer Time, at the said Observatory, not exceeding Twelve Months, as the said Commissioners shall judge necessary; and also when and so soon as the said Commissioners, or Two Thirds of them at the least, shall, after such Experiments and Voyages have been made and performed as aforesaid, have declared and determined that such Method is generally practicable and useful, and sufficiently exact to determine the Longitude at Sea within the Degrees or Limits aforesaid, in all Voyages for the Space of Six Months, (Impediments from cloudy and hazy Weather excepted); and also when and so soon as the Principles and Practice of such Method are fully discovered and explained to the Satisfaction of the said Commissioners, or Two Thirds of them at least; and such Author or Authors, Discoverer or Discoverers, shall have delivered up and assigned over to the said Commissioners, for the Use of the Public, the absolute Property of such Time-keepers as shall have been tried by such Experiments and Voyages as aforesaid, together with all Plates, Descriptions, Theories, and Explanations belonging or relating to the same, and which shall contain the Whole of such Discovery of the Longitude; and in case the Method proposed shall be by means of improved Solar and Lunar Tables, then and in such Case the Author or Authors of such improved Solar and Lunar Tables, their Executors, Administrators, or Assigns, shall be intitled to and have the Reward or Sum of Five Thousand Pounds, if such Solar and Lunar Tables shall prove sufficiently exact to shew the Distance of the Moon from the Sun and Stars in the Heavens within Fifteen Seconds of a Degree, answering to about Seven Minutes of Longitude, after making an allowance of Half a Degree for the Errors of Observation; and when it shall appear to the Satisfaction of the said Commissioners, or Two Thirds of them at least, that such Tables are constructed intirely upon the Principles of Gravitation laid down by Sir *Isaac Newton* (except with respect to those Elements which must necessarily be taken from astronomical Observations), and also when the Truth of such Tables shall have

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been further confirmed and proved by Comparison with a Series of astronomical Observations made during a Period of Eighteen Years and a Half, which is deemed the Period of the Irregularities of the Lunar Motions; which Reward shall be due and paid, when the said Commissioners, or two Thirds of them at least, shall have declared and determined, that such Tables are sufficiently exact to shew the Distance of the Moon from the Sun and Stars in the Heavens, within the limits above-mentioned; and also when the Author or Authors of such improved Solar and Lunar Tables, his or their Executors, Administrators, or Assigns, shall have delivered up and assigned over to the said Commissioners, for the Use of the Public, the absolute Right and Property to and in the same, together with the Theory relating thereunto; and in case any other Method shall be proposed for finding the Longitude at Sea besides those before-mentioned, that then and in such Case the First Author or Authors, Discoverer or Discoverers, of any such Method, his or their Executors, Administrators, or Assigns, shall be intitled to and have the Reward or Sum of Five Thousand Pounds, if it shall determine the said Longitude within One Degree of a great Circle or Sixty geographical miles; to the Reward or Sum of Seven thousand Five hundred Pounds, if it shall determine the same to Two Thirds of that Distance; and to the Reward or Sum of Ten thousand Pounds, if it shall determine the same to One Half of the same Distance; which respective Rewards shall be due and paid, so soon as the said Commissioners, or Two Thirds of them at least, shall, after proper Trial have been made by their Appointment and Direction, have determined that such Method shall be generally practicable and useful for finding the Longitude at Sea within the respective limits above-mentioned.

And be it further Enacted, by the Authority aforesaid, That when and so soon as any such Method or Methods, for the Discovery of the said Longitude, shall be tried, as before-mentioned, and found practicable and useful at Sea, and sufficiently exact to determine the Longitude within any of the Degrees or Limits aforesaid, the said Commissioners, or Two Thirds of them, shall certify the same, under their Hands and Seals, to the Commissioners of the Navy for the Time being, together with the Name or Names of the Person or Persons who shall be the Author or Authors of such Method or Methods; and upon the Receipt of such Certificate, the said Commissioners of the Navy are hereby authorized and required to make out a Bill or Bills upon the Treasurer of the Navy for the respective Sum or Sums of Money to which the Author or Authors of such Proposal, his or their Executors, Administrators, or Assigns, shall be intitled by virtue of this Act; which Sum or Sums the said Treasurer is hereby required to pay to the said Author or Authors, their Executors, Administrators, or Assigns accordingly, out of any

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Money that may be in his Hands unapplied to the Use of the Navy, according to the true Intent and Meaning of this Act.

And be it further Enacted, by the Authority aforesaid, That the said Commissioners for the Discovery of Longitude at Sea, or any Five or more of them, shall have full Power and Authority to hear and receive any Proposal or Proposals that shall be made to them for discovering the said Longitude, or for making any other useful Improvement in Navigation; and in case the said Commissioners, or any Five or more of them, shall be so far satisfied of the Probability of any such Discovery or Improvement as to think it proper to cause Experiments to be made thereof, they shall certify the same, together with the Names of the Author or Authors of such Proposal or Proposals, under their Hands and Seals, to the Commissioners of the Navy, who are hereby authorised and required to make out a Bill or Bills upon the Treasurer of the Navy for any Sum or Sums of Money as the said Commissioners for the Discovery of Longitude at Sea, or any Five or more of them, shall think necessary for making such Experiments; which Sum or Sums the Treasurer of the Navy is hereby required to pay immediately to such Person or Persons as shall be appointed by the said Commissioners to make those Experiments out of any Money which shall be in his the said Treasurer's Hands unapplied as aforesaid.

And be it further Enacted, by the Authority aforesaid, That if any Person or Persons shall make any Discovery for finding the Longitude at Sea, which, though not of so great Use as to be intitled to any of the great Rewards above specified, shall nevertheless be adjudged by the said Commissioners for the Discovery of Longitude at Sea, or the major Part of them, to be of considerable Use to the Public, or shall make any other Discovery or Discoveries, Improvement or Improvements, useful to Navigation; then, and in such Case, such Person or Persons, his or their Executors, Administrators, or Assigns, shall, from time to time, have and receive such less Reward or Sum or Sums of Money as the said Commissioners, or the major Part of them, shall think reasonable; and certify accordingly, under their Hands and Seals, to the Commissioners of the Navy, who are hereby authorised and required to make out a Bill or Bills upon the Treasurer of the Navy for any such Sum or Sums of Money, which the said Treasurer is hereby authorized and required to pay immediately to such Person or Persons, his or their Executors, Administrators, or Assigns, out of any Money that shall be in his the said Treasurer's Hands unapplied as aforesaid.

Provided also, and it is hereby further Enacted, That in case any Person or Persons who shall and may have received any Sum or Sums of Money, by virtue of this Act, as a Reward for any Method of

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discovering the Longitude at Sea, shall afterwards become intitled to any of the greater Rewards appointed by this Act, for or on account of the same Method; that then, and in such Case, such Sum or Sums of Money as they shall or may have received as aforesaid shall be considered as Part of such greater Reward, and deducted therefrom accordingly; and that no Person shall receive more in the Whole for any One Method for discovering the Longitude at Sea than the greatest Reward appointed for such Method by the Act,

By the COMMISSIONERS appointed by Acts of Parliament for the Discovery of the Longitude at Sea; and for examining, trying, and judging of all Proposals, Experiments, and Improvements relating to the same.

WHEREAS we think fit to employ you to print the Nautical Almanacs and Astronomical Ephemerides for the Years 1793, 1794, and 1795; We do, in pursuance of the power vested in us by Act of Parliament, hereby license, authorize and empower you to print the Nautical Almanacs and Astronomical Ephemerides for those Years accordingly, together with such other useful Tables for facilitating the method of discovering the Longitude at Sea as have been constructed under our direction, and will be delivered to you by the Rev. Dr. NEVIL MASKELYNE, His Majesty's Astronomer Royal, at *Greenwich*; and for so doing this shall be your sufficient Warrant. Given under our Hands and Seals the 6th Day of *March*, 1784.

To Mr. WILLIAM RICHARDSON,

Printer,

In the STRAND.

HOWE	(L. S.)
RODNEY	(L. S.)
H. PIGOT	(L. S.)
H. PALLISER	(L. S.)
M. BARTON	(L. S.)
S. BARRINGTON	(L. S.)
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JOS. BANKS	(L. S.)
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J. SMITH	(L. S.)
E. WARING	(L. S.)
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T. STEELE	(L. S.)
P. STEPHENS	(L. S.)
C. MIDDLETON	(L. S.)
J. SMITH	(L. S.)

By Command of the Commissioners,

H. PARKER, Secretary.

By

By the COMMISSIONERS appointed by Acts
of Parliament for the Discovery of the Lon-
gitude at Sea; and for examining, trying,
and judging of all Proposals, Experiments,
and Improvements relating to the same.

WHEREAS we think fit to employ you to publish and vend,
and to cause to be published and vended, all such Nautical
Almanacs and Astronomical Ephemerides, and such other useful Tables,
constructed under our Direction, as have hitherto been printed, or
shall hereafter be printed for the several Years next ensuing, down to
the Year 1800 inclusive. We do therefore, in pursuance of the
power vested in us by Act of Parliament, hereby license, authorize,
and empower you to publish and vend, and to cause to be published
and vended, such Nautical Almanacs, and Astronomical Ephemerides,
as well as such other useful Tables, constructed under our Direction,
as have hitherto been printed, or shall hereafter be printed for the
several Years next ensuing, down to the Year 1800 inclusive. For
which this shall be your Warrant. Given under our Hands and
Seals the 5th Day of December, 1789.

To Mr. PETER ELMSLY,
Bookseller,
In the STRAND.

CHATHAM	(L.S.)
RODNEY	(L.S.)
H. PALLISER	(L.S.)
S. BARRINGTON	(L.S.)
G. POCOCK	(L.S.)
Jos. BANKS	(L.S.)
N. MASKELYNE	(L.S.)
T. HORNSEY	(L.S.)
J. SMITH	(L.S.)
E. WARING	(L.S.)
A. SHEPHERD	(L.S.)
G. ROSE	(L.S.)
T. STEELE	(L.S.)
P. STEPHENS	(L.S.)
C. MIDDLETON	(L.S.)
J. SMITH	(L.S.)

By Command of the Commissioners.

H. PARKER, Secretary.

By

P R E F A C E.

THE Commissioners of Longitude, in pursuance of the Powers vested in them by Act of Parliament, present the Public with the NAUTICAL ALMANAC and ASTRONOMICAL EPHEMERIS for the Year 1795, being the Twenty-seventh Impression, to be continued annually; a Work which must greatly contribute to the Improvement of Astronomy, Geography, and Navigation. This EPHEMERIS contains every thing essential to general Use that is to be found in any Ephemeris hitherto published, with many other useful and interesting Particulars never yet offered to the Public in any Work of this Kind. The Tables of the Moon had been brought by the late Professor MAYER of *Göttingen* to a sufficient Exactness to determine the Longitude at Sea, within a Degree, as appeared by the Trials of several Persons who made Use of them. The Difficulty and Length of the necessary Calculations seemed the only Obstacles to hinder them from becoming of general Use: To remove which this EPHEMERIS was made; the Mariner being hereby relieved from the Necessity of calculating the Moon's Place from the Tables, and afterwards computing the Distance to Seconds by Logarithms, which are the principal

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principal and only very delicate Part of the Calculus ; so that the finding the Longitude by the Help of the EPHEMERIS is now in a Manner reduced to the Computation of the Time, an Operation equal to that of an Azimuth, and the Correction of the Distance on account of Refraction and Parallax, which is also rendered very easy by either of the Two Methods invented by Mr. LYONS and Mr. DUNTHORNE, and published in the First Edition of the Tables requisite to be used with the EPHEMERIS, and since, with Improvements, in the Second Edition of the same Tables ; or by either of the Two Methods annexed to the EPHEMERIS of 1772, being both Improvements of the Method which I formerly published in the BRITISH MARINER'S GUIDE and PHILOSOPHICAL TRANSACTIONS, the First by myself, and the Second by Mr. GEORGE WITCHELL, which are now also annexed to the Second Edition of the REQUISITE TABLES, but still more so by the GENERAL TABLES for correcting the apparent Distance of the Moon and a Star or the Sun from the Effects of Refraction and Parallax, computed at great Expence by Order of the Commissioners of Longitude, and published under the Care of Dr. SHEPHERD, Plumian Professor of Astronomy and Experimental Philosophy at CAMBRIDGE, in 1772.

All the Calculations of the EPHEMERIS relating to the Sun were made from Mr. MAYER's last manuscript Tables, received by the Board of Longitude after his Decease, which have been printed under my Inspection, and published in 1770 ; but the Calculations of the Moon which had been made since the year 1777 inclusive from new Tables, improved from MAYER's Tables, composed by Mr. CHARLES MASON, under my Direction, from Calculations made by Order of the Board of Longitude, upon the Series of Lunar Observations made by the late

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Dr. BRADLEY, and published in the Nautical Almanac of 1774, are in this EPHEMERIS, for the Second Time, computed from Tables still farther corrected by Mr. MASON, and rendered more exact by the Addition of Eight Equations to the number in MAYER's Tables, taken from MAYER's Theory, but settled as to the *Maxima* from the said Observations, and the whole being calculated to Tenths of a Second. These new Tables, when compared with the above-mentioned Series of Observations, a proper Allowance being made for the unavoidable Error of Observation, seem to give always the Moon's Longitude in the Heavens correctly within 30 Seconds of a Degree; which greatest Error, added to a possible Error of One Minute in taking the Moon's Distance from the Sun or a Star at Sea, will at a Medium only produce an Error of 42 Minutes of Longitude. The Error of the same Tables in Latitude seems never to exceed a Minute, which will but triflingly affect the computed Distances of the Moon from the Sun and zodiacal Stars set down in the EPHEMERIS.

The Calculations of the Planets Places were made from M. DE LA LANDE's Tables contained in the Second Edition of his Astronomy, as they have been for every EPHEMERIS beginning with that of 1780; and those of the Eclipses of Jupiter's Satellites were made from Mr. WARGENTIN's Tables annexed to the same Tables of M. DE LA LANDE, excepting the Eclipses of Jupiter's Second Satellite, which were inserted in this EPHEMERIS for the Fifteenth Time from new Tables transmitted to me from their learned Author Mr. WARGENTIN, Secretary to the Royal Academy of Sciences at STOCKHOLM, and published at the End of the Nautical Almanac of 1779.

All

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All the Articles of the EPHEMERIS were computed by Two separate Persons, and examined by a Third, except the Moon's Longitude, Latitude, Right Ascension, Declination, Semidiameter, and Parallax, which for Noon were computed by One Person, and for Midnight by another, and the Truth of these Calculations ascertained by means of Differences, which for the Moon's Longitude were carried as far as the Fourth Order.

NEVIL MASKELYNE,

ASTRONOMER ROYAL.

GREENWICH,

April 26, 1790.

EXPLANATION OF THE CHARACTERS

USED IN THE

ASTRONOMICAL EPHEMERIS.

The P L A N E T S, &c.

☉ The Sun.	♂ Mars.
☾ The Moon.	♃ Jupiter.
☿ Mercury.	♄ Saturn.
♀ Venus.	♅ Georgian.
♁ The Earth.	

- ♊ The Moon's, or any other Planet's Ascending Node,
- ♋ The Descending Node.
- ♌ Conjunction, or Planets situated in the same Longitude.
- ♍ Quadrature, or Planets situated in Longitudes differing 3 Signs from each other.
- ♎ Opposition, or Planets situated in opposite Longitudes, or differing 6 Signs from each other.

N. North.	Inf. Inferior.	Im. Immersion.
S. South.	Sup. Superior.	Em. Emerfion.

S I G N S of the Z O D I A C.

S.	S.
0 ♈ Aries.	6 ♎ Libra
1 ♉ Taurus.	7 ♏ Scorpio.
2 ♊ Gemini.	8 ♐ Sagittarius.
3 ♋ Cancer.	9 ♑ Capricornus.
4 ♌ Leo.	10 ♒ Aquarius.
5 ♍ Virgo.	11 ♓ Pisces.

PRINCIPAL ARTICLES

O F

THE ALMANAC OF 1795.

Chronological Cycles.

Dominical Letter	- - - - D.
Lunar Cycle, or Golden Numb.	10
Epact	- - - - 9
Solar Cycle	- - - - 12
Roman Indiction	- - - - 13

Ember Days.

Feb.	- - - - 25, 27 and 28
May	- - - - 27, 29 and 30
September	- - - 16, 18 and 19
December	- - - 16, 18 and 19

MOVEABLE FEASTS.

Septuagesima Sunday	- Feb. 1	Low Sunday	- - - - Apr. 12
Quinq. or Shrove Sund.	15	Rogation Sunday	- - - May 10
Ash Wed. or 1st Day of Lent	18	Asc. Day, or Holy Thurf.	- - 14
Middle Lent Sunday	- Mar. 15	Whitfunday	- - - - 24
Palm Sunday	- - - - 29	Trinity Sunday	- - - - 31
EASTER DAY	- - - - Apr. 5	Advent Sunday	- - - Nov. 29

T E R M S.

	<i>London.</i>		<i>Oxford.</i>		<i>Cambridge.</i>	
	Begins	Ends	Begins	Ends	Begins	Ends
Hilary, or Lent.	Jan. 23	Feb. 12	Jan. 14	Mar. 28	{ Jan. 13	
					{ Div. Feb. 18	Midn.
						Mar. 27
Easter	Apr. 22	May 18	April 15	May 21	{ April 15	
					{ Div. May 28	Noon
						July 10
Trinity	June 5	June 24	June 3	July 18		
Michael.	Nov. 6	Nov. 28	Oct. 10	Dec. 17	{ Oct. 10	
					{ Div. Nov. 12	Midn.
						Dec. 16

Oxford Aft July 13. — Camb. Commencement July 7.

OBLIQUITY, &c.

Obliquity of the Ecliptic.	1795	Equation of Equinoctial Points.
D. M. S.		S.
23. 27. 50, 5	Jan. 1.	13, 8
23. 27. 51, 0	Apr. 1.	14, 7
23. 27. 51, 6	July 1.	15, 6
23. 27. 52, 2	Oct. 1.	16, 2
23. 27. 52, 9	Dec. 31.	16, 8

SOLAR AND LUNAR ECLIPSES IN THE YEAR 1795.

Jan. 20. *SUN eclipsed, invisible at Greenwich.*

♂ at 12^h. 9'. in Long. 10°. 10'. 2'. ♀'s Lat. 40°. 55". N.
☉ is centrally eclipsed on the Meridian at 12^h. 26'.
in Long. 173°. $\frac{1}{2}$ East, and Lat. 25°. $\frac{1}{4}$ North.

Feb. 3. *MOON eclipsed, visible at Greenwich.*

	H. M.
Beginning	10. 59
Middle	12. 25
Ecliptic Opposition	12. 32
End	13. 51
Digits eclipsed 7°. 27'. on ♀'s South Limb.	

July 15. *SUN eclipsed, invisible at Greenwich.*

♂ at 19^h. 31' in Long. 3°. 23°. 38'. ♀'s Lat. 30°. $\frac{1}{4}$ S.
☉ will be centrally eclipsed on the Meridian at
19^h. 41'. in Long. 64°. $\frac{3}{4}$ East, and Lat. 10°. $\frac{1}{4}$ South.

July 31. *MOON eclipsed, partly visible at Greenwich.*

	H. M.
Beginning	6. 46 $\frac{1}{2}$
Middle	7. 42 $\frac{1}{2}$
♂ rises	
Ecliptic Opposition	7. 53
End	8. 38
Digits eclipsed 2°. 52' on ♀'s North Limb.	

I. JANUARY 1795.

Days of the Month.	Days of the Week.	Sundays, Holidays, Terms, &c.	Phases of the MOON.
			D. H. M.
			Full Moon - - - - 4. 21. 33
			Last Quarter - - - - 12. 16. 51
			New Moon - - - - 20. 12. 9
			First Quarter - - - - 27. 9. 3
			Other Phenomena.
			D. H. M.
1	Th.	Circumcision.	1. 21. 26 ☾ ☽ 8
2	F.		23. 14 ☾ 1 ad ☽ 8
3	Sa.		23. 40 ☾ 2 ad ☽ 8
4	Sun.	2d Sunday after Christmas.	2. 2. 53 Im. of ☽ 8 * 2'S. of ☽'s C.
5	M.		3. 44 1/2 Em. * 3 1/2 South.
6	Tu.	Epiphany.	4. 2. 6 ☾ ☽ ☽
7	W.		16. 19 ☾ ☽ ☽
8	Th.	Lucian.	6. 10. 35 ☾ ☽ ☽
9	F.		8. 1. 52 ☾ ☽ ☽
10	Sa.		10. 19. 21 ☾ ☽ ☽
11	Sun.	1st Sunday after Epiphany.	13. - - - ☽ ☽ ☽ diff. Lat. 19'.
12	M.		15. 3. 27 ☾ ☽ ☽
13	Tu.	Hil. Camb. Ter. begins.	7. 53 ☾ ☽ ☽
14	W.	Oxf. Term begins.	19. 11. 46 ☽ enters ☽
15	Th.		20. - - - ☽ ☽ ☽ diff. Lat. 16'.
16	F.		☽ eclipsed, invisible.
17	Sa.		22. - - - ☽ Stationary.
18	Sun.	2d Su. after Epi. 2d Charl.	23. - - - ☽ Stationary.
19	M.	[Birth-day kept. Prisca.	13. 4 ☾ 1 ad ☽ ☽
20	Tu.	Fabian. In 8d. of S. Hil.	27. 3. 15 ☾ 2 ad ☽ Ceti.
21	W.	Agnes. [1 ret.	11. 59 1/2 Im. of ☽ Ceti, * 14 1/2 N.
22	Th.	Vincent.	12. 23 1/2 Em. * 14 1/2 N. [of ☽'s C.
23	F.	Hilary Term begins.	29. 3. 33 ☾ ☽ 8
24	Sa.		5. 23 ☾ 1 ad ☽ 8
25	Sun.	3d Su. after Epiph. Con-	5. 49 ☾ 2 ad ☽ 8
26	M.	[version of St. Paul.	10. 25 ☾ ☽ 8
27	Tu.	Pr. Aug. Fr. bo. In 15 days	31. 9. 35 ☾ ☽ ☽
28	W.	[of S. Hil. 2 ret.	
29	Th.		
30	F.	K. Charles I. Martyr.	
31	Sa.		

Days of the Month.	Days of the Week.	THE SUN'S			Equation of Time.	Diff.
		Longitude.	Rt. Ascens. in Time.	Declin. South.		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Th.	9. 11. 9. 37	18. 48. 33, 0	22. 59. 40	4 8, 4	28, 1
2	F.	9. 12. 10. 47	18. 52. 57, 7	22. 54. 19	4 36, 5	27, 6
3	Sa.	9. 13. 11. 57	18. 57. 22, 0	22. 48. 31	5. 4, 1	27, 3
4	Sun.	9. 14. 13. 6	19. 1. 45, 8	22. 42. 15	5. 31, 4	26, 8
5	M.	9. 15. 14. 15	19. 6. 9, 3	22. 35. 33	5. 58, 2	26, 4
6	Tu.	9. 16. 15. 24	19. 10. 32, 3	22. 28. 23	6. 24, 6	25, 9
7	W.	9. 17. 16. 32	19. 14. 54, 8	22. 20. 47	6. 50, 5	25, 3
8	Th.	9. 18. 17. 41	19. 19. 16, 8	22. 12. 46	7. 15, 8	24, 9
9	F.	9. 19. 18. 50	19. 23. 38, 3	22. 4. 17	7. 40, 7	24, 3
10	Sa.	9. 20. 19. 58	19. 27. 59, 3	21. 55. 23	8. 5, 0	23, 7
11	Sun.	9. 21. 21. 6	19. 32. 19, 6	21. 46. 3	8. 28, 7	23, 2
12	M.	9. 22. 22. 14	19. 36. 39, 4	21. 36. 18	8. 51, 9	22, 6
13	Tu.	9. 23. 23. 21	19. 40. 58, 6	21. 26. 8	9. 14, 5	22, 0
14	W.	9. 24. 24. 29	19. 45. 17, 2	21. 15. 32	9. 36, 5	21, 3
15	Th.	9. 25. 25. 36	19. 49. 35, 0	21. 4. 33	9. 57, 8	20, 6
16	F.	9. 26. 26. 43	19. 53. 52, 3	20. 53. 9	10. 18, 4	19, 9
17	Sa.	9. 27. 27. 50	19. 58. 8, 8	20. 41. 21	10. 38, 3	19, 2
18	Sun.	9. 28. 28. 56	20. 2. 24, 7	20. 29. 10	10. 57, 5	18, 5
19	M.	9. 29. 30. 2	20. 6. 39, 8	20. 16. 35	11. 16, 0	17, 8
20	Tu.	10. 0. 31. 7	20. 10. 54, 2	20. 3. 38	11. 33, 8	17, 0
21	W.	10. 1. 32. 11	20. 15. 7, 7	19. 50. 18	11. 50, 8	16, 2
22	Th.	10. 2. 33. 14	20. 19. 20, 6	19. 36. 35	12. 7, 0	15, 5
23	F.	10. 3. 34. 17	20. 23. 32, 6	19. 22. 31	12. 22, 5	14, 6
24	Sa.	10. 4. 35. 18	20. 27. 43, 8	19. 8. 6	12. 37, 1	13, 7
25	Sun.	10. 5. 36. 17	20. 31. 54, 2	18. 53. 21	12. 50, 8	13, 0
26	M.	10. 6. 37. 16	20. 36. 3, 7	18. 38. 13	13. 3, 8	12, 1
27	Tu.	10. 7. 38. 13	20. 40. 12, 5	18. 22. 47	13. 15, 9	11, 3
28	W.	10. 8. 39. 9	20. 44. 20, 3	18. 7. 0	13. 27, 2	10, 5
29	Th.	10. 9. 40. 3	20. 48. 27, 3	17. 50. 54	13. 37, 7	9, 6
30	F.	10. 10. 40. 56	20. 52. 33, 5	17. 34. 29	13. 47, 3	8, 7
31	Sa.	10. 11. 41. 48	20. 56. 38, 9	17. 17. 45	13. 56, 0	

Days.	Time of ☉'s Semidiam. pass. Merid.	T H E S U N ' S			Place of the ☉'s Node.
	M. S.	Semi- diameter.	Hourly Motion.	Logarith. Distance.	S. D. M.
1	1. 10, 9	16. 19, 2	2. 32, 9	9. 992641	4. 9. 55
7	1. 10, 6	16. 19, 1	2. 32, 8	9. 992699	4. 9. 35
13	1. 10, 1	16. 18, 9	2. 32, 8	9. 992860	4. 9. 16
19	1. 9, 5	16. 18, 3	2. 32, 6	9. 993098	4. 8. 57
25	1. 8, 9	16. 17, 6	2. 32, 4	9. 993390	4. 8. 38

The SATELLITES of JUPITER will not be visible
this Month,

JUPITER being too near the SUN.

THE PLANETS						
Days	Heliocentric		Geocentric		Declin.	Passage
	Long.	Lat.	Long.	Lat.		Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
MERCURY.						
1	7. 6. 15	1. 11 N	8. 22. 17	0. 25 N	22. 49 S	22. 40
4	7. 15. 12	0. 5 N	8. 26. 32	0. 2 N	23. 23	22. 45
7	7. 23. 49	0. 58 S	9. 0. 55	0. 20 S	23. 48	22. 51
10	8. 2. 12	1. 58	9. 5. 22	0. 41	24. 2	22. 58
13	8. 10. 28	2. 55	9. 9. 55	1. 0	24. 5	23. 5
16	8. 18. 42	3. 48	9. 14. 32	1. 17	23. 57	23. 12
19	8. 27. 0	4. 37	9. 19. 15	1. 32	23. 36	23. 20
22	9. 5. 28	5. 20	9. 24. 3	1. 44	23. 2	23. 28
25	9. 14. 11	5. 58	9. 28. 56	1. 54	22. 15	23. 37
28	9. 23. 16	6. 28	10. 3. 55	2. 1	21. 15	23. 45
31	10. 2. 49	6. 49	10. 9. 1	2. 4	20. 1	23. 54
VENUS. Inf. δ 1 ^d . 17 ^h .						
1	3. 10. 44	1. 29 N	9. 12. 19	4. 2 N	18. 53 S	0. 4
7	3. 20. 28	1. 59	9. 8. 44	5. 16	17. 56	23. 16
13	4. 0. 13	2. 25	9. 5. 55	6. 5	17. 15	22. 39
19	4. 9. 58	2. 47	9. 4. 27	6. 28	16. 56	22. 8
25	4. 10. 43	3. 4	9. 4. 26	6. 20	16. 54	21. 43
MARS.						
1	0. 1. 0	1. 21 S	10. 29. 20	1. 2 S	12. 41 S	3. 18
7	0. 4. 43	1. 16	11. 3. 58	0. 57	10. 56	3. 9
13	0. 8. 25	1. 11	11. 8. 36	0. 52	9. 10	3. 1
19	0. 12. 5	1. 5	11. 13. 13	0. 47	7. 20	2. 52
25	0. 15. 44	0. 59	11. 17. 50	0. 42	5. 28	2. 44
JUPITER. δ 5 ^d . 4 ^h .						
1	9. 15. 3	0. 8 S	9. 14. 26	0. 7 S	22. 48 S	0. 14
7	9. 15. 33	0. 9	9. 15. 50	0. 7	22. 39	23. 51
13	9. 16. 4	0. 10	9. 17. 14	0. 8	22. 29	23. 31
19	9. 16. 34	0. 10	9. 18. 37	0. 9	22. 19	23. 11
25	9. 17. 4	0. 11	9. 20. 0	0. 9	22. 8	22. 52
SATURN.						
1	1. 27. 46	2. 2 S	1. 23. 9	2. 12 S	16. 27 N	8. 35
7	1. 28. 0	2. 1	1. 22. 57	2. 10	16. 26	8. 8
13	1. 28. 13	2. 1	1. 22. 48	2. 9	16. 25	7. 41
19	1. 28. 26	2. 1	1. 22. 43	2. 7	16. 25	7. 16
25	1. 28. 39	2. 0	1. 22. 45	2. 5	16. 27	6. 50

Days of the Month.	Days of the Week.	THE MOON'S							
		Longitude.				Latitude.			
		Noon.	Midnight.			Noon.	Midnight.		
		S. D. M. S.	S. D. M. S.	S. D. M. S.		D. M. S.	D. M. S.	D. M. S.	
1	Th.	1. 20. 8. 28	1. 27. 18. 29	5. 6. 58 S	4. 56. 52 S				
2	F.	2. 4. 27. 40	2. 11. 35. 24	4. 42. 7	4. 23. 6				
3	Sa.	2. 18. 41. 4	2. 25. 44. 4	4. 0. 5	3. 33. 30				
4	Sun.	3. 2. 43. 48	3. 9. 39. 47	3. 3. 55	2. 31. 49				
5	M.	3. 16. 31. 31	3. 23. 18. 43	1. 57. 49	1. 22. 29				
6	Tu.	4. 0. 1. 3	4. 6. 38. 24	0. 46. 22 S	0. 10. 2 S				
7	W.	4. 13. 10. 42	4. 19. 37. 56	0. 26. 0 N	1. 1. 15 N				
8	Th.	4. 26. 0. 20	5. 2. 18. 2	1. 35. 19	2. 7. 48				
9	F.	5. 8. 31. 26	5. 14. 40. 50	2. 38. 23	3. 6. 49				
10	Sa.	5. 20. 46. 41	5. 26. 49. 29	3. 32. 50	3. 56. 15				
11	Sun.	6. 2. 49. 46	6. 8. 48. 5	4. 16. 54	4. 34. 39				
12	M.	6. 14. 45. 0	6. 20. 41. 13	4. 49. 23	5. 0. 58				
13	Tu.	6. 26. 37. 14	7. 2. 33. 41	5. 9. 20	5. 14. 26				
14	W.	7. 8. 31. 12	7. 14. 30. 19	5. 16. 9	5. 14. 28				
15	Th.	7. 20. 31. 37	7. 26. 35. 36	5. 9. 19	5. 0. 42				
16	F.	8. 2. 42. 46	8. 8. 53. 30	4. 48. 35	4. 33. 2				
17	Sa.	8. 15. 8. 13	8. 21. 27. 9	4. 14. 4	3. 51. 49				
18	Sun.	8. 27. 50. 34	9. 4. 18. 37	3. 26. 23	2. 58. 2				
19	M.	9. 10. 51. 19	9. 17. 28. 41	2. 26. 59	1. 53. 36				
20	Tu.	9. 24. 10. 36	10. 0. 56. 52	1. 18. 14	0. 41. 23 N				
21	W.	10. 7. 47. 14	10. 14. 41. 24	0. 3. 33 N	0. 34. 41 S				
22	Th.	10. 21. 38. 57	10. 28. 39. 26	1. 12. 45 S	1. 49. 58				
23	F.	11. 5. 42. 26	11. 12. 47. 25	2. 25. 43	2. 59. 24				
24	Sa.	11. 19. 53. 57	11. 27. 1. 31	3. 30. 27	3. 58. 17				
25	Sun.	0. 4. 9. 41	0. 11. 18. 4	4. 22. 27	4. 42. 34				
26	M.	0. 18. 26. 11	0. 25. 33. 44	4. 58. 17	5. 9. 24				
27	Tu.	1. 2. 40. 25	1. 9. 45. 52	5. 15. 44	5. 17. 14				
28	W.	1. 16. 49. 52	1. 23. 52. 10	5. 13. 57	5. 5. 57				
29	Th.	2. 0. 52. 34	2. 7. 50. 51	4. 53. 27	4. 36. 38				
30	F.	2. 14. 46. 49	2. 21. 40. 15	4. 15. 52	3. 51. 32				
31	Sa.	2. 28. 30. 59	3. 5. 18. 56	3. 24. 1	2. 53. 48				

		THE MOON'S					
Days of the Month.	Days of the Week.	Age	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight.	Noon.	Midnight.
		Days	H. M.	D. M.	D. M.	D. M.	D. M.
1	Th.	12	8. 47	49. 6	56. 11	12. 52 N	14. 46 N
2	F.	13	9. 42	63. 23	70. 41	16. 26	17. 51
3	Sa.	14	10. 39	78. 3	85. 29	18. 59	19. 50
4	Sun.	15	11. 36	92. 55	100. 19	20. 22	20. 35
5	M.	16	12. 33	107. 40	114. 55	20. 29	20. 5
6	Tu.	17	13. 27	122. 2	129. 0	19. 25	18. 29
7	W.	18	14. 17	135. 47	142. 23	17. 18	15. 55
8	Th.	19	15. 4	148. 49	155. 4	14. 21	12. 39
9	F.	20	15. 49	161. 10	167. 7	10. 50	8. 55
10	Sa.	21	16. 32	172. 56	178. 39	6. 55	4. 52
11	Sun.	22	17. 14	184. 18	189. 53	2. 48 N	0. 43 N
12	M.	23	17. 55	195. 27	201. 0	1. 22 S	3. 26 S
13	Tu.	24	18. 37	206. 34	212. 10	5. 28	7. 27
14	W.	25	19. 20	217. 51	223. 37	9. 22	11. 12
15	Th.	26	20. 5	229. 29	235. 29	12. 56	14. 32
16	F.	27	20. 53	241. 37	247. 55	16. 0	17. 18
17	Sa.	28	21. 44	254. 21	260. 57	18. 25	19. 20
18	Sun.	29	22. 37	267. 42	274. 36	20. 0	20. 25
19	M.	30	23. 31	281. 36	288. 41	20. 35	20. 27
20	Tu.	1	0	295. 50	303. 1	20. 1	19. 17
21	W.	2	0. 26	310. 11	317. 20	18. 17	17. 0
22	Th.	3	1. 21	324. 26	331. 28	15. 27	13. 40
23	F.	4	2. 15	338. 25	345. 18	11. 41	9. 32
24	Sa.	5	3. 7	352. 6	358. 51	7. 14	4. 50 S
25	Sun.	6	3. 58	5. 33	12. 14	2. 22 S	0. 8 N
26	M.	7	4. 49	18. 54	25. 35	2. 38 N	5. 5
27	Tu.	8	5. 41	32. 17	39. 3	7. 28	9. 44
28	W.	9	6. 33	45. 53	52. 47	11. 52	13. 49
29	Th.	10	7. 27	59. 46	66. 51	15. 34	17. 5
30	F.	11	8. 22	73. 59	81. 11	18. 21	19. 21
31	Sa.	12	9. 18	88. 25	95. 40	20. 3	20. 27

Days of the Month.	Days of the Week.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midnight.
		M. S.	M. S.	M. S.	M. S.		
1	Th.	16. 14	16. 13	59. 35	59. 32	4801	4805
2	F.	16. 12	16. 10	59. 27	59. 20	4811	4820
3	Sa.	16. 7	16. 4	59. 10	58. 58	4832	4846
4	Sun.	16. 0	15. 56	58. 44	58. 29	4864	4882
5	M.	15. 51	15. 46	58. 12	57. 53	4903	4927
6	Tu.	15. 41	15. 35	57. 33	57. 12	4952	4979
7	W.	15. 29	15. 24	56. 51	56. 30	5005	5032
8	Th.	15. 18	15. 13	56. 10	55. 51	5058	5082
9	F.	15. 8	15. 4	55. 33	55. 16	5106	5128
10	Sa.	15. 0	14. 56	55. 1	54. 49	5148	5163
11	Sun.	14. 54	14. 51	54. 39	54. 31	5177	5187
12	M.	14. 50	14. 49	54. 25	54. 22	5195	5199
13	Tu.	14. 49	14. 50	54. 22	54. 25	5199	5195
14	W.	14. 51	14. 53	54. 30	54. 38	5189	5178
15	Th.	14. 56	14. 59	54. 48	55. 0	5165	5149
16	F.	15. 3	15. 8	55. 15	55. 31	5129	5108
17	Sa.	15. 13	15. 18	55. 49	56. 8	5085	5060
18	Sun.	15. 23	15. 29	56. 28	56. 49	5035	5008
19	M.	15. 34	15. 40	57. 9	57. 29	4983	4957
20	Tu.	15. 45	15. 50	57. 49	58. 8	4932	4908
21	W.	15. 55	15. 59	58. 25	58. 41	4887	4867
22	Th.	16. 3	16. 7	58. 55	59. 7	4850	4835
23	F.	16. 9	16. 11	59. 16	59. 24	4824	4815
24	Sa.	16. 13	16. 13	59. 29	59. 32	4809	4805
25	Sun.	16. 14	16. 14	59. 33	59. 33	4804	4804
26	M.	16. 13	16. 12	59. 31	59. 27	4806	4811
27	Tu.	16. 11	16. 10	59. 23	59. 18	4816	4822
28	W.	16. 8	16. 6	59. 11	59. 4	4831	4839
29	Th.	16. 3	16. 1	58. 55	58. 46	4850	4861
30	F.	15. 58	15. 55	58. 36	58. 25	4874	4887
31	Sa.	15. 52	15. 49	58. 14	58. 1	4901	4917

DISTANCES of MOON'S Center from SUN, and from STARS EAST of her.

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Pollux.	61. 17. 8	59. 31. 28	57. 45. 53	56. 0. 22	54. 14. 56	52. 29. 36	50. 44. 25	48. 59. 23
2		47. 14. 30	45. 29. 46	43. 45. 18	42. 1. 3	40. 17. 3	38. 33. 23	36. 50. 2	35. 7. 3
3		33. 24. 28							
3	Regulus.	68. 23. 23	66. 37. 27	64. 51. 40	63. 6. 2	61. 20. 35	59. 35. 18	57. 50. 13	56. 5. 20
4		54. 20. 38	52. 36. 9	50. 51. 53	49. 7. 52	47. 24. 4	45. 40. 32	43. 57. 14	42. 14. 13
5		40. 31. 27	38. 48. 57	37. 6. 43	35. 24. 47	33. 43. 8	32. 1. 47	30. 20. 45	28. 40. 1
6		26. 59. 36	25. 19. 30	23. 39. 44	22. 0. 17	20. 21. 10			
6	Spica μ	67. 49. 59	66. 13. 11	64. 36. 43	63. 0. 35	61. 20. 37	72. 42. 27	71. 4. 37	69. 27. 8
7		55. 5. 1	53. 30. 56	51. 57. 12	50. 23. 49	48. 50. 46	59. 49. 20	58. 14. 13	56. 39. 27
8		42. 41. 59	41. 10. 40	39. 39. 43	38. 9. 8	36. 38. 55	47. 18. 3	45. 45. 40	44. 13. 39
9		30. 41. 55	29. 13. 39	27. 45. 56	26. 18. 45	24. 52. 7	35. 9. 3	33. 39. 35	32. 10. 33
10		19. 12. 24					23. 26. 7	22. 0. 49	20. 36. 13
11		64. 36. 20	63. 8. 9	61. 40. 8	60. 12. 16	58. 44. 34	57. 17. 1	55. 49. 37	54. 22. 21
12	Antares.	52. 55. 14	51. 28. 13	50. 1. 19	48. 34. 34	47. 7. 56	45. 41. 25	44. 15. 2	42. 48. 46
13		41. 22. 37							
10	The Sun.	119. 29. 33	118. 6. 14	116. 43. 6	115. 20. 10	113. 57. 26	112. 34. 52	111. 12. 28	109. 50. 13
11		108. 28. 8	107. 6. 11	105. 44. 21	104. 22. 38	103. 1. 3	101. 39. 34	100. 18. 10	98. 56. 51
12		97. 35. 37	96. 14. 25	94. 53. 15	93. 32. 8	92. 11. 4	90. 50. 2	89. 28. 59	88. 7. 57

Days	Stars Names.	Nov.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
13	The Sun.	86. 46. 55	85. 25. 51	84. 4. 45	82. 43. 36	81. 22. 25	80. 1. 10	78. 39. 50	77. 18. 25
14		75. 56. 56	74. 35. 20	73. 13. 37	71. 51. 47	70. 29. 49	69. 7. 45	67. 45. 28	65. 23. 4
15		65. 0. 30	63. 37. 45	62. 14. 48	60. 51. 40	59. 28. 20	58. 4. 48	56. 41. 2	55. 17. 3
16		53. 52. 50	52. 28. 23	51. 3. 40	49. 38. 43	48. 13. 30	46. 48. 1	45. 22. 15	43. 56. 13
17		42. 29. 54	41. 3. 18	39. 36. 24					
22	♈ Aries.	73. 37. 42	71. 56. 32	70. 15. 16	68. 33. 56	66. 52. 33	65. 11. 14	63. 29. 52	61. 48. 30
23		60. 7. 5	58. 25. 49	56. 44. 41	55. 3. 42	53. 22. 51	51. 42. 15	50. 1. 50	48. 21. 43
24		46. 41. 53							
24	Aldebaran.	76. 46. 2	74. 59. 11	73. 12. 20	71. 25. 27	69. 38. 32	67. 51. 37	66. 4. 42	64. 17. 47
25		62. 30. 52	60. 43. 58	58. 57. 5	57. 10. 14	55. 23. 25	53. 36. 3	51. 49. 55	50. 3. 15
26		48. 16. 37	46. 30. 2	44. 43. 31	42. 57. 4	41. 10. 40	39. 24. 21	37. 38. 6	35. 51. 56
27		34. 5. 54	32. 19. 50	30. 33. 55	28. 48. 5	27. 2. 21	25. 16. 42	23. 31. 10	21. 45. 44
28		20. 0. 25							
28	Pollux.	64. 33. 4	62. 49. 7	61. 5. 19	59. 21. 40	57. 38. 9	55. 54. 47	54. 11. 37	52. 28. 37
29		50. 45. 49	49. 3. 12	47. 20. 49	45. 38. 39	43. 56. 44	42. 15. 5	40. 33. 43	38. 52. 38
30		37. 11. 52							
30	Regulus.	72. 17. 34	70. 34. 6	68. 50. 47	67. 7. 36	65. 24. 34	63. 41. 40	61. 58. 55	60. 16. 19
31		58. 33. 51	56. 51. 32	55. 9. 22	53. 27. 22	51. 45. 32	50. 3. 52	48. 22. 23	46. 41. 4
P.		44. 59. 56							

DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.

Days	Stars Names.	Noon.	III ^h .	VI ^h .	XII ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
1	Fomalhaut.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
2		78. 4. 39 91. 33. 29	79. 45. 42	81. 26. 48	83. 7. 55	84. 49. 4	86. 30. 15	88. 11. 22	89. 52. 26
2	α Arietis.	32. 59. 20	34. 33. 47	36. 8. 55	37. 44. 50	39. 21. 33	40. 58. 51	42. 36. 36	44. 14. 48
3		45. 53. 28	47. 32. 21	49. 11. 25	50. 50. 43	52. 30. 14	54 9. 51	55. 49. 25	57. 29. 0
4		59. 8. 37							
4	Aldebaran.	25. 50. 33	27. 35. 0	29. 19. 15	31. 3. 15	32. 47. 3	34. 30. 36	36. 13. 53	37. 56. 56
5		39. 39. 44	41. 22. 16	43. 4. 30	44. 46. 29	46. 28. 11	48. 9. 35	49. 50. 40	51. 31. 29
6		53. 11. 59	54. 52. 11	56. 32. 4	58. 11. 39	59. 50. 55	61. 29. 52	63. 8. 30	64. 46. 49
7		66. 24. 48							
7	Pollux.	23. 33. 54	25. 5. 33	26. 37. 26	28. 9. 30	29. 41. 50	31. 14. 10	32. 46. 44	34. 19. 13
8		35. 51. 44	37. 24. 6	38. 56. 20	40. 28. 29	42. 0. 31	43. 32. 22	45. 4. 4	46. 35. 36
9		48. 6. 59	49. 38. 9	51. 9. 9	52. 39. 58	54. 10. 37	55. 41. 4	57. 11. 21	58. 41. 26
10		60. 11. 21							
10	Regulus.	23. 58. 34	25. 29. 27	27. 0. 8	28. 30. 39	30. 0. 58	31. 31. 7	33. 1. 6	34. 30. 57
11		36. 0. 38	37. 30. 11	38. 59. 36	40. 28. 55	41. 58. 6	43. 27. 11	44. 56. 11	46. 25. 7
12		47. 53. 58	49. 22. 46	50. 51. 32	52. 20. 15	53. 48. 56	55. 17. 35	56. 46. 14	58. 14. 53
13		59. 43. 32	61. 12. 12	62. 47. 54	64. 9. 39	65. 38. 27	67. 7. 19	68. 36. 15	70. 5. 17
14		71. 34. 23	73. 3. 35	74. 32. 54	76. 2. 21	77. 31. 54			

Days	Stars Names.	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
14	Spica η	30.	22. 45	31.	50. 31	33.	18. 40	34.	47. 13	24.	36. 4	26.	2. 4	27.	28. 30	28.	55. 24
15		42.	15. 9	43.	45. 43	45.	16. 37	46.	47. 50	36.	16. 8	37.	45. 23	39.	14. 58	40.	44. 53
16		54.	28. 49	56.	1. 59	57.	35. 27	59.	9. 16	48.	19. 23	49.	51. 15	51.	23. 27	52.	55. 58
17		67.	3. 16	68.	39. 3	70.	15. 11	71.	51. 37	60.	43. 24	62.	17. 53	63.	52. 41	65.	27. 49
18		79.	58. 44							73.	28. 24	75.	5. 30	76.	42. 55	78.	20. 39
19																	
23	The Sun.	45.	25. 1	47.	4. 17	48.	43. 32	50.	22. 51	38.	48. 29	40.	27. 32	42.	6. 39	43.	45. 48
24		58.	39. 31	60.	18. 50	61.	58. 8	63.	37. 25	52.	2. 10	53.	41. 30	55.	20. 50	57.	0. 11
25		71.	53. 10	73.	32. 10	75.	11. 7	76.	50. 0	65.	16. 40	66.	55. 52	68.	35. 0	70.	14. 7
26		85.	3. 28	86.	41. 55	88.	20. 17	89.	58. 34	78.	28. 50	80.	7. 36	81.	46. 18	83.	24. 55
27		98.	8. 39	99.	46. 23	101.	24. 1	103.	1. 34	91.	36. 46	93.	14. 52	94.	52. 54	96.	30. 49
28		111.	7. 40	112.	44. 33	114.	21. 20	115.	57. 59	104.	39. 0	106.	16. 20	107.	53. 33	109.	30. 40
29										117.	34. 32	119.	10. 57	120.	47. 15		
27	Fomalhaut.	74.	56. 58	76.	36. 6	78.	15. 16	79.	54. 27	68.	20. 27	69.	59. 32	71.	38. 37	73.	17. 46
28		88.	9. 35	89.	48. 21	91.	27. 2	93.	5. 35	81.	33. 39	83.	12. 44	84.	51. 45	86.	50. 42
29										94.	44. 1						
29	α Arietis.	42.	17. 38	43.	53. 8	45.	28. 58	47.	5. 6	36.	0. 23	37.	33. 56	39.	7. 58	40.	42. 32
30		55.	8. 43	56.	45. 47	58.	22. 53	60.	0. 2	48.	41. 32	50.	18. 7	51.	54. 50	53.	31. 42
31		68.	5. 27							61.	37. 12	63.	14. 20	64.	51. 27	66.	28. 30
P. 1																	

The SATELLITES of JUPITER will not be visible
this Month,

JUPITER being too near the SUN.

Days of the Month.	Days of the Week.	Sundays, Holidays, Terms, &c.	Phases of the MOON.	
				D. H. M.
			Full Moon - - - - -	3. 12. 32
			Last Quarter - - - - -	11. 14. 8
			New Moon - - - - -	19. 1. 5
			First Quarter - - - - -	25. 17. 3
			Other Phenomena.	
			D. H. M.	
1	Sun.	Septuagesima-Sunday.	1. 0. 7	☾ ☿ ☿
2	M.	Purificat. of B. V. Mary.	2. 19. 6	☾ ☿ ☿
3	Tu.	Blas. On mor. of Purif.	3. - - -	☾ eclipsed, visible.
4	W.	[3 ret.	4. 10. 34	☾ ☿ ☿
5	Th.		7. 3. 41	☾ ☿ ☿
6	F.	Agatha.	11. 11. 50	☾ ☿ ☿
7	Sa.		16. 18	☾ ☿ ☿
8	Sun.	Sexagesima-Sunday.	14. 14. 7	☾ ☿ ☿
9	M.	In 8 days of Purif. 4 ret.	15. 14. 19	☾ ☿ ☿
10	Tu.		16. 11. 20	☾ ☿ ☿
11	W.		18. 2. 33	☾ ☿ ☿
12	Th.	Hilary Term ends.	23. 9. 21	☾ ☿ ☿
13	F.		16. 45	☾ ☿ ☿
14	Sa.	Valentine.	25. 8. 57	☾ ☿ ☿
15	Sun.	Quinquagesima-Sunday.	10. 47	☾ ☿ ☿
16	M.		11. 13	☾ ☿ ☿
17	Tu.		15. 48	☾ ☿ ☿
18	W.	Ash-Wednesday. Camb. T.	27. 15. 16	☾ ☿ ☿
19	Th.	[divides m.	28. 6. 3	☾ ☿ ☿
20	F.			
21	Sa.			
22	Sun.	1st Sunday in Lent.		
23	M.			
24	Tu.	St. Matthias. Pr. Adol. Fr. b.		
25	W.			
26	Th.			
27	F.			
28	Sa.			

Days of the Month.	Days of the Week.	THE SUN'S			Equation of Time.	Diff.
		Longitude.	Rt. Ascens.	Declin.		
			<i>in Time.</i>	<i>South.</i>	<i>Add.</i>	
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Sun.	10. 12. 42. 38	21. 0. 43, 4	17. 0. 43	14. 3, 9	7, 1
2	M.	10. 13. 43. 26	21. 4. 47, 0	16. 43. 24	14. 11, 0	6, 2
3	Tu.	10. 14. 44. 13	21. 8. 49, 8	16. 25. 47	14. 17, 2	5, 4
4	W.	10. 15. 44. 59	21. 12. 51, 7	16. 7. 53	14. 22, 6	4, 6
5	Th.	10. 16. 45. 44	21. 16. 52, 9	15. 49. 43	14. 27, 2	3, 8
6	F.	10. 17. 46. 27	21. 20. 53, 3	15. 31. 16	14. 31, 0	3, 0
7	Sa.	10. 18. 47. 10	21. 24. 52, 8	15. 12. 33	14. 34, 0	2, 2
8	Sun.	10. 19. 47. 50	21. 28. 51, 6	14. 53. 36	14. 36, 2	1, 5
9	M.	10. 20. 48. 30	21. 32. 49, 6	14. 34. 22	14. 37, 7	0, 7
10	Tu.	10. 21. 49. 9	21. 36. 46, 8	14. 14. 55	14. 38, 4	0, 1
11	W.	10. 22. 49. 47	21. 40. 43, 3	13. 55. 13	14. 38, 3	0, 8
12	Th.	10. 23. 50. 23	21. 44. 39, 0	13. 35. 17	14. 37, 5	1, 6
13	F.	10. 24. 50. 59	21. 48. 33, 9	13. 15. 8	14. 35, 9	2, 3
14	Sa.	10. 25. 51. 33	21. 52. 28, 2	12. 54. 46	14. 33, 6	3, 1
15	Sun.	10. 26. 52. 6	21. 56. 21, 7	12. 34. 11	14. 30, 5	3, 7
16	M.	10. 27. 52. 37	22. 0. 14, 7	12. 13. 24	14. 26, 8	4, 4
17	Tu.	10. 28. 53. 7	22. 4. 6, 7	11. 52. 26	14. 22, 4	5, 1
18	W.	10. 29. 53. 36	22. 7. 58, 1	11. 31. 16	14. 17, 3	5, 9
19	Th.	11. 0. 54. 3	22. 11. 48, 8	11. 9. 55	14. 11, 4	6, 5
20	F.	11. 1. 54. 28	22. 15. 38, 8	10. 48. 24	14. 4, 9	7, 2
21	Sa.	11. 2. 54. 51	22. 19. 28, 2	10. 26. 43	13. 57, 7	7, 8
22	Sun.	11. 3. 55. 13	22. 23. 17, 0	10. 4. 53	13. 49, 9	8, 4
23	M.	11. 4. 55. 32	22. 27. 5, 1	9. 42. 53	13. 41, 5	9, 1
24	Tu.	11. 5. 55. 50	22. 30. 52, 5	9. 20. 45	13. 32, 4	9, 7
25	W.	11. 6. 56. 5	22. 34. 39, 3	8. 58. 29	13. 22, 7	10, 3
26	Th.	11. 7. 56. 18	22. 38. 25, 6	8. 36. 4	13. 12, 4	10, 8
27	F.	11. 8. 56. 29	22. 42. 11, 2	8. 13. 33	13. 1, 6	11, 4
28	Sa.	11. 9. 56. 38	22. 45. 56, 4	7. 50. 54	12. 50, 2	

Days.	Time of ☉'s Semidiam. pass. Merid.	THE SUN'S			Place of the D's Node.
	M. S.	Semidia- meter.	Hourly Motion.	Logarith. Distance.	
	M. S.	M. S.	M. S.		S. D. M.
1	1. 8, 1	16. 16, 6	2. 32, 2	9. 993810	4. 8. 16
7	1. 7, 4	16. 15, 6	2. 31, 8	9. 994264	4. 7. 57
13	1. 6, 7	16. 14, 4	2. 31, 5	9. 994796	4. 7. 38
19	1. 6, 1	16. 13, 1	2. 31, 0	9. 995376	4. 7. 19
25	1. 5, 6	16. 11, 7	2. 30, 5	9. 995982	4. 7. 0

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	22. 40. 12	3	14. 11. 42	1	13. 50. 48 Im.
3	17. 8. 25	7	3. 29. 52	1	17. 12. 5 E.
5	11. 36. 43	10	16. 48. 15	8	17. 49. 8 Im.
7	6. 5. 3	14	6. 6. 47	8	21. 11. 2 E.
9	0. 33. 23	17	19. 25. 26	15	21. 48. 6 Im.
10	19. 1. 49	21	8. 44. 14	16	1. 10. 38 E.
12	13. 30. 14	24	22. 3. 10	23	1. 47. 35 Im.
14	7. 58. 43	28	11. 22. 17	23	3. 10. 46 E.
16	2. 27. 13				
17	26. 55. 44				
19	15. 24. 20				
21	9. 52. 53				
23	4. 21. 31				
24	22. 50. 8				
26	17. 18. 48				
28	11. 47. 32				
				IV. Satellite.	
				3	11. 12. 8 Im.
				3	14. 54. 49 E.
				20	5. 14. 55 Im.
				20	9. 3. 21 E.

THE PLANETS						
Days	Heliocentric		Geocentric		Declin.	Passage Merid.
	Long.	Lat.	Long.	Lat.		
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
MERCURY. Sup. δ 3 ^d . 16 ^h .						
1	10. 6. 8	0. 54 S	10. 10. 44	2. 5 S	19. 34 S	23. 57
4	10. 16. 32	7. 0	10. 15. 58	2. 2	18. 0	0. 3
7	10. 27. 45	6. 51	10. 21. 19	1. 57	16. 15	0. 13
10	11. 9. 56	6. 24	10. 26. 46	1. 47	14. 17	0. 22
13	11. 23. 15	5. 35	11. 2. 17	1. 31	12. 6	0. 31
16	0. 7. 52	4. 20	11. 7. 50	1. 10	9. 43	0. 40
19	0. 23. 50	2. 39	11. 13. 19	0. 43	7. 13	0. 48
22	1. 11. 6	0. 36 S	11. 18. 36	0. 10 S	4. 40	0. 55
25	1. 29. 24	1. 38 N	11. 23. 29	0. 28 N	2. 9 S	1. 1
28	2. 18. 17	3. 46	11. 27. 44	1. 10	0. 10 N	1. 4
VENUS.						
1	5. 1. 7	3. 18 N	9. 6. 8	6. 12 N	17. 8 S	21. 23
7	5. 10. 52	3. 23	9. 8. 49	5. 46	17. 26	21. 11
13	5. 20. 37	3. 22	9. 12. 24	5. 14	17. 41	21. 3
19	6. 0. 20	3. 16	9. 16. 43	4. 38	17. 50	20. 58
25	6. 10. 2	3. 4	9. 21. 34	4. 0	17. 48	20. 56
MARS.						
1	0. 19. 57	0. 52 S	11. 23. 10	0. 37 S	3. 17 S	2. 35
7	0. 23. 32	0. 46	11. 27. 45	0. 32	1. 23 S	2. 28
13	0. 27. 5	0. 40	0. 2. 18	0. 27	0. 30 N	2. 20
19	1. 0. 36	0. 33	0. 6. 50	0. 23	2. 22	2. 14
25	1. 4. 6	0. 27	0. 11. 20	0. 18	4. 13	2. 7
JUPITER.						
1	9. 17. 40	0. 12 S	9. 21. 36	0. 10 S	21. 54 S	22. 30
7	9. 18. 10	0. 12	9. 22. 58	0. 11	21. 41	22. 12
13	9. 18. 41	0. 13	9. 24. 17	0. 11	21. 29	21. 54
19	9. 19. 11	0. 14	9. 25. 33	0. 12	21. 15	21. 36
25	9. 19. 41	0. 15	9. 26. 48	0. 13	21. 2	21. 18
SATURN. $\square$ 11 ^d . 5 ^h 1 ^m .						
1	1. 28. 55	2. 0	1. 22. 47	2. 3 S	16. 30 N	6. 22
7	1. 29. 8	2. 0	1. 22. 55	2. 1	16. 34	5. 58
13	1. 29. 22	1. 59	1. 23. 7	2. 0	16. 39	5. 35
19	1. 29. 35	1. 59	1. 23. 22	1. 58	16. 44	5. 13
25	1. 29. 48	1. 59	1. 23. 42	1. 56	16. 50	4. 52

Days of the Month.	Days of the Week.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Sun.	3. 12. 3. 50	3. 18. 45. 37	2. 21. 20 S	1. 47. 11 S
2	M.	3. 25. 24. 5	4. 1. 59. 11	1. 11. 51 S	0. 35. 52 S
3	Tu.	4. 8. 30. 44	4. 14. 58. 49	0. 0. 17 N	0. 36. 5 N
4	W.	4. 21. 23. 17	4. 27. 44. 14	1. 11. 5	1. 44. 53
5	Th.	5. 4. 1. 38	5. 10. 15. 40	2. 17. 3	2. 47. 16
6	F.	5. 16. 26. 25	5. 22. 34. 7	3. 15. 14	3. 40. 42
7	Sa.	5. 28. 39. 1	6. 4. 41. 25	4. 3. 28	4. 23. 21
8	Sun.	6. 10. 41. 39	6. 16. 40. 8	4. 40. 13	4. 53. 54
9	M.	6. 22. 37. 17	6. 28. 33. 37	5. 4. 23	5. 11. 35
10	Tu.	7. 4. 29. 38	7. 10. 25. 53	5. 15. 26	5. 15. 56
11	W.	7. 16. 22. 57	7. 22. 21. 22	5. 13. 3	5. 6. 45
12	Th.	7. 28. 21. 48	8. 4. 24. 45	4. 57. 8	4. 44. 8
13	F.	8. 10. 30. 53	8. 16. 40. 44	4. 27. 49	4. 8. 16
14	Sa.	8. 22. 54. 49	8. 29. 13. 38	3. 45. 33	3. 19. 51
15	Sun.	9. 5. 37. 39	9. 12. 7. 12	2. 51. 17	2. 20. 8
16	M.	9. 18. 42. 33	9. 25. 23. 56	1. 46. 39	1. 11. 16 N
17	Tu.	10. 2. 11. 23	10. 9. 4. 45	0. 34. 19 N	0. 3. 38 S
18	W.	10. 16. 3. 56	10. 23. 8. 30	0. 42. 28	1. 20. 16
19	Th.	11. 0. 17. 57	11. 7. 31. 39	1. 57. 38	2. 33. 27
20	F.	11. 14. 48. 50	11. 22. 8. 40	3. 7. 2	3. 37. 42
21	Sa.	11. 29. 30. 12	0. 6. 52. 30	4. 4. 52	4. 28. 0
22	Sun.	0. 14. 14. 39	0. 21. 35. 46	4. 46. 39	5. 0. 32
23	M.	0. 28. 55. 1	1. 6. 11. 43	5. 9. 27	5. 13. 18
24	Tu.	1. 13. 25. 16	1. 20. 35. 13	5. 12. 10	5. 6. 9
25	W.	1. 27. 41. 11	2. 4. 42. 58	4. 55. 29	4. 40. 28
26	Th.	2. 11. 40. 28	2. 18. 33. 36	4. 21. 27	5. 58. 50
27	F.	2. 25. 22. 27	3. 2. 7. 8	3. 33. 3	3. 4. 34
28	Sa.	3. 8. 47. 45	3. 15. 24. 31	2. 33. 50	2. 1. 20

Days of the Month.	Days of the Week.	THE MOON'S					
		Age	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight.	Noon.	Midnight.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Sun.	13	10. 14	102. 53	110. 3	20. 34 N	20. 22 N
2	M.	14	11. 7	117. 8	124. 6	19. 54	19. 10
3	Tu.	15	12. 0	130. 56	137. 38	18. 10	16. 56
4	W.	16	12. 49	144. 10	150. 33	15. 31	13. 55
5	Th.	17	13. 35	156. 46	162. 51	12. 10	10. 18
6	F.	18	14. 20	168. 48	174. 38	8. 21	6. 20
7	Sa.	19	15. 3	180. 23	186. 3	4. 16	2. 10 N
8	Sun.	20	15. 45	191. 40	197. 14	0. 4 N	2. 2 S
9	M.	21	16. 26	202. 49	208. 23	4. 6 S	6. 7
10	Tu.	22	17. 9	214. 1	219. 41	8. 5	9. 58
11	W.	23	17. 53	225. 26	231. 17	11. 45	13. 26
12	Th.	24	18. 40	237. 15	243. 21	14. 59	16. 24
13	F.	25	19. 29	249. 35	255. 58	17. 38	18. 41
14	Sa.	26	20. 20	262. 30	269. 11	19. 31	20. 7
15	Sun.	27	21. 14	276. 0	282. 57	20. 29	20. 35
16	M.	28	22. 9	290. 0	297. 8	20. 24	19. 55
17	Tu.	29	23. 5	304. 19	311. 32	19. 8	18. 3
18	W.	30	0	318. 45	325. 56	16. 42	15. 5
19	Th.	1	0. 1	333. 5	340. 11	13. 13	11. 8
20	F.	2	0. 55	347. 14	354. 14	8. 52	6. 27
21	Sa.	3	1. 49	1. 10	8. 5	3. 56 S	1. 22 S
22	Sun.	4	2. 42	14. 58	21. 50	1. 13 N	3. 47 N
23	M.	5	3. 36	28. 43	35. 37	6. 17	8. 40
24	Tu.	6	4. 29	42. 33	49. 32	10. 55	12. 59
25	W.	7	5. 23	56. 34	63. 38	14. 51	16. 30
26	Th.	8	6. 17	70. 45	77. 55	17. 53	19. 0
27	F.	9	7. 14	85. 5	92. 15	19. 50	20. 22
28	Sa.	10	8. 10	99. 24	106. 29	20. 36	20. 33

Days of the Month.	Days of the Week.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midnight.
		M. S.	M. S.	M. S.	M. S.		
1	Sun.	15. 45	15. 41	57. 48	57. 34	4933	4951
2	M.	15. 37	15. 33	57. 19	57. 3	4970	4990
3	Tu.	15. 28	15. 24	56. 47	56. 31	5010	5031
4	W.	15. 20	15. 15	56. 15	55. 59	5051	5072
5	Th.	15. 11	15. 7	55. 43	55. 28	5093	5112
6	F.	15. 3	15. 0	55. 14	55. 1	5130	5148
7	Sa.	14. 57	14. 54	54. 50	54. 40	5162	5175
8	Sun.	14. 51	14. 50	54. 31	54. 25	5187	5195
9	M.	14. 49	14. 48	54. 21	54. 19	5201	5203
10	Tu.	14. 48	14. 49	54. 20	54. 23	5202	5198
11	W.	14. 51	14. 53	54. 29	54. 37	5190	5179
12	Th.	14. 56	15. 0	54. 48	55. 2	5165	5146
13	F.	15. 4	15. 9	55. 18	55. 36	5125	5102
14	Sa.	15. 14	15. 20	55. 56	56. 18	5076	5048
15	Sun.	15. 27	15. 34	56. 42	57. 7	5017	4985
16	M.	15. 41	15. 48	57. 32	57. 58	4953	4921
17	Tu.	15. 55	16. 1	58. 23	58. 47	4890	4860
18	W.	16. 7	16. 13	59. 9	59. 29	4833	4809
19	Th.	16. 17	16. 22	59. 47	60. 2	4787	4769
20	F.	16. 25	16. 27	60. 13	60. 21	4755	4746
21	Sa.	16. 28	16. 28	60. 25	60. 26	4741	4740
22	Sun.	16. 28	16. 26	60. 24	60. 18	4742	4750
23	M.	16. 24	16. 21	60. 10	59. 59	4759	4772
24	Tu.	16. 17	16. 13	59. 46	59. 32	4788	4805
25	W.	16. 9	16. 5	59. 17	59. 1	4823	4843
26	Th.	16. 1	15. 56	58. 45	58. 28	4863	4883
27	F.	15. 51	15. 46	58. 10	57. 52	4906	4928
28	Sa.	15. 41	15. 37	57. 35	57. 19	4950	4970

DISTANCES of MOON's Center from SUN, and from STARS EAST of her.

Days	Stars Names.	Non.	III ^h .	V th .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Regulus.	44. 59. 57	43. 18. 58	41. 38. 11	39. 57. 35	38. 17. 11	36. 36. 59	34. 56. 59	33. 17. 11
2		31. 37. 35	29. 58. 11	28. 19. 0	26. 40. 2	25. 1. 18	23. 22. 48	21. 44. 32	20. 6. 31
3		18. 28. 45							
3	Spica μ	72. 28. 56	70. 51. 59	69. 15. 16	67. 38. 49	66. 2. 37	64. 26. 40	62. 50. 58	61. 15. 31
4		59. 40. 20	58. 5. 24	56. 30. 44	54. 56. 20	53. 22. 13	51. 48. 22	50. 14. 49	48. 41. 33
5		47. 8. 34	45. 35. 52	44. 3. 28	42. 31. 23	40. 59. 37	39. 28. 9	37. 57. 3	36. 26. 17
6		34. 55. 53	33. 25. 48	31. 56. 9	30. 26. 56	28. 58. 8	27. 29. 50	26. 2. 3	24. 34. 49
7		23. 8. 9							
7	Antares.	68. 43. 16	67. 13. 52	65. 44. 41	64. 15. 41	62. 46. 53	61. 18. 16	59. 49. 51	58. 21. 36
8		56. 53. 33	55. 25. 40	53. 57. 57	52. 30. 25	51. 3. 3	49. 35. 52	48. 8. 51	46. 42. 1
9		45. 15. 21	43. 48. 51	42. 22. 32	40. 56. 24	39. 30. 28	38. 4. 44	36. 39. 13	35. 13. 54
10		33. 48. 49							
10	α Aquilæ.	82. 32. 5	81. 14. 16	79. 56. 31	78. 38. 50	77. 21. 13	76. 3. 41	74. 46. 14	73. 28. 53
11		72. 11. 37	70. 54. 26	69. 37. 25	68. 20. 30	67. 3. 43			

Days	Stars Names.	Non.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
8	The Sun.	118. 4. 0	116. 42. 45	115. 21. 33	114. 0. 24	112. 39. 17	111. 18. 12	120. 46. 41	119. 25. 18
9		107. 15. 0	105. 53. 56	104. 32. 49	103. 11. 41	101. 50. 31	100. 29. 18	109. 57. 8	108. 36. 4
10		96. 25. 13	95. 3. 42	93. 42. 4	92. 0. 19	90. 58. 28	89. 36. 29	99. 8. 1	97. 45. 39
11		85. 29. 36	84. 6. 59	82. 44. 12	81. 21. 12	79. 58. 1	78. 34. 37	88. 14. 20	86. 52. 3
12		74. 23. 1	72. 58. 40	71. 34. 3	70. 9. 11	68. 44. 2	67. 18. 36	77. 10. 59	75. 47. 7
13		63. 0. 31	61. 33. 52	60. 6. 54	58. 39. 35	57. 11. 57	55. 43. 58	65. 52. 52	64. 26. 51
14		51. 17. 52	49. 48. 27	48. 18. 39	46. 48. 30	45. 17. 58	43. 47. 4	54. 15. 37	52. 46. 55
15		39. 12. 7						42. 15. 47	40. 44. 9
16									
20	Aldebaran.	67. 10. 1	65. 19. 37	63. 29. 13	61. 38. 49	74. 36. 21	72. 41. 5	70. 50. 46	69. 0. 24
21		52. 27. 24	50. 37. 19	48. 47. 22	46. 57. 30	59. 48. 26	57. 58. 5	56. 7. 48	54. 17. 34
22		37. 50. 17	36. 1. 19	34. 12. 3	32. 23. 56	45. 7. 46	43. 18. 10	41. 28. 43	39. 39. 25
23		23. 24. 2				30. 35. 32	28. 47. 20	26. 59. 21	25. 11. 35
24	Pollux.	67. 53. 37	66. 7. 31	64. 21. 40	62. 36. 6	60. 50. 48	59. 5. 4	57. 21. 4	55. 36. 38
25		53. 52. 31	52. 8. 43	50. 25. 14	48. 42. 6	46. 59. 19	45. 16. 52	43. 34. 48	41. 53. 7
26		40. 11. 47							
26	Regulus.	75. 23. 32	73. 40. 2	71. 56. 46	70. 13. 45	68. 30. 59	66. 48. 27	65. 6. 10	63. 24. 7
27		61. 42. 19	60. 0. 45	58. 19. 24	56. 38. 18	54. 57. 26	53. 16. 48	51. 36. 24	49. 56. 14
28		48. 16. 17	46. 36. 33	44. 57. 3	43. 17. 46	41. 38. 42	39. 59. 51	38. 21. 12	36. 42. 45
M.I		35. 4. 29							

DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.

Days	Stars Names.	Non.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Aldebaran.	35. 11. 21	36. 52. 20	38. 33. 8	40. 13. 46	41. 54. 12	43. 34. 27	45. 14. 30	46. 54. 21
2		48. 34. 1	50. 13. 28	51. 52. 43	53. 31. 45	55. 10. 35	56. 49. 12	58. 27. 35	60. 5. 48
3		61. 43. 46	63. 21. 32	64. 59. 4	66. 36. 23	68. 13. 28	69. 50. 19	71. 26. 56	73. 3. 18
4		74. 39. 25							
4	Pollux.	31. 23. 10	32. 55. 34	34. 27. 58	36. 0. 23	37. 32. 48	39. 5. 11	40. 37. 30	42. 9. 45
5		43. 41. 56	45. 13. 59	46. 45. 55	48. 17. 44	49. 49. 25	51. 20. 57	52. 52. 20	54. 23. 33
6		55. 54. 35							
6	Regulus.	19. 38. 32	21. 10. 39	22. 42. 34	24. 14. 18	25. 45. 51	27. 17. 13	28. 48. 25	30. 19. 25
7		31. 50. 16	33. 20. 56	34. 51. 26	36. 21. 47	37. 51. 59	39. 22. 0	40. 51. 54	42. 21. 39
8		43. 51. 17	45. 20. 47	46. 50. 10	48. 19. 28	49. 48. 38	51. 17. 42	52. 46. 41	54. 15. 37
9		55. 44. 27	57. 13. 14	58. 41. 58	60. 10. 40	61. 39. 19	63. 7. 56	64. 36. 34	66. 5. 10
10		67. 33. 47	69. 2. 24	70. 31. 3	71. 59. 44	73. 28. 26			
10	Spica π					20. 45. 12	22. 8. 57	23. 33. 12	24. 57. 58
11		26. 23. 17	27. 49. 2	29. 15. 12	30. 41. 45	32. 8. 42	33. 35. 56	35. 3. 29	36. 31. 21
12		37. 59. 31	39. 27. 56	40. 56. 39	42. 25. 39	43. 54. 56	45. 24. 30	46. 54. 23	48. 24. 33

Configurations of the SATELLITES of JUPITER,
at Half an Hour past 6 o'Clock in the Morning.

1		2.	.1	⊙		3.	4.
2	3●			⊙	1.		4.
3				⊙		2.	
4	1● 4●	3.		⊙			
5			2. 3.	⊙	.1		
6		4.		⊙	2 3		
7		4.		⊙	.1 2.	3.	
8		4.	2.	⊙		3.	
9		4.		⊙	1.		3●
10		4.	3.	⊙		2.	
11	2●	3 4		⊙	1.		
12	1.0	2 3	4.	⊙			
13				⊙	1. 2. 3. 4.		
14				⊙	.1 2.	3. 4.	

Configurations at 6 o'Clock in the Morning.

15			1 2	⊙		3.	4.
16			2.	⊙	3. 1.		4.
17			3.	⊙		2.	4.
18		3.		⊙	1 2		4.
19		3.	2.	⊙		4.	
20	1● 2.0.3.0			⊙		4.	
21				⊙	.1 2.	3.	
22		4.		⊙		3.	
23		4.	2.	⊙	.1 3.		
24		4.	3.	⊙		2.	
25		4.	3.	⊙	1 2		
26		4.	3.	⊙			
27		4.		⊙	3. 2.		1●
28		4.		⊙	.1 2.	3.	

Days of the Month.	Days of the Week.	Sundays, Holidays, Terms, &c.	Phases of the MOON.
			D. H. M.
			Full Moon - - - - - 5. 5. 6
			Last Quarter - - - - - 13. 9. 10
			New Moon - - - - - 20. 11. 42
			First Quarter - - - - - 27. 2. 22
			Other Phenomena.
			D. H. M.
1	Sun.	2d Sund. in Lent. David.	2. 1. 48 ☾ ♄
2	M.	Chad.	3. 17. 53 ☾ ♄
3	Tu.		4. - - - ☽ ☿ × diff. Lat. 1'.
4	W.		6. 11. 20 ☾ ♄
5	Th.		9. - - - ♀ Stationary.
6	F.		10. 19. 30 ☾ ♄
7	Sa.	Perpetua.	11. 0. 1 ☾ ♄
8	Sun.	3d Sunday in Lent.	13. 22. 59 ☾ ♄ μ ♄
9	M.		14. 23. 46 ☾ ♄ ♄
10	Tu.		16. 7. 11 ☾ ♄
11	W.		17. 15. 28 ☾ ♄ ♄
12	Th.	Gregory, M.	18. 28 ☾ ♄ ♄
13	F.		18. 3. 17 ☾ ♄
14	Sa.		20. 2. 53 ☾ enters ♄
15	Sun.	4th Sunday in Lent.	22. 18. 2 ☾ ♄ ☽ Ceti.
16	M.		23. 1. 10 ☾ ♄ Ceti.
17	Tu.		24. 16. 2 ☾ ♄ ☽
18	W.	Edw. K. of W. Saxons.	17. 48 ☾ ♄ ad ☽ ☽
19	Th.		18. 14 ☾ ♄ ad ☽
20	F.		21. 33 Im. of ☽ * 12'S. of ☾'s
21	Sa.	Benedict.	22. 3 Em. * 14'S. [Cent.
22	Sun.	5th Sunday in Lent.	26. 21. 7 ☾ ♄ ♄
23	M.		27. 11. 43 ☾ ☽ ♄
24	Tu.		29. 7. 27 ☾ ♄ ☽
25	W.	Annun. of V. Mary.	30. 23. 51 ☾ ♄ ☽
26	Th.		
27	F.	Camb. Term ends.	
28	Sa.	Oxford Term ends.	
29	Sun.	6th Sunday in Lent. Palm Sun.	
30	M.		
31	Tu.		

Days of the Month.	Days of the Week.	THE SUN'S			Equation of Time. <i>Add.</i>	Diff.
		Longitude.	Rt. Ascens. <i>in Time.</i>	Declin. <i>South.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Sun.	11. 10. 56. 46	22. 49. 41,0	7. 28. 17	12. 38,3	12,6
2	M.	11. 11. 56. 50	22. 53. 25,0	7. 5. 16	12. 25,7	13,0
3	Tu.	11. 12. 56. 52	22. 57. 8,5	6. 42. 19	12. 12,7	13,5
4	W.	11. 13. 56. 52	23. 0. 51,5	6. 19. 16	11. 59,2	13,9
5	Th.	11. 14. 56. 50	23. 4. 34,1	5. 56. 8	11. 45,3	14,4
6	F.	11. 15. 56. 46	23. 8. 16,3	5. 32. 55	11. 30,9	14,7
7	Sa.	11. 16. 56. 40	23. 11. 58,0	5. 9. 38	11. 16,2	15,1
8	Sun.	11. 17. 56. 33	23. 15. 39,3	4. 46. 16	11. 1,1	15,5
9	M.	11. 18. 56. 24	23. 19. 20,4	4. 22. 51	10. 45,6	15,9
10	Tu.	11. 19. 56. 13	23. 23. 1,1	3. 59. 22	10. 29,7	16,2
11	W.	11. 20. 56. 1	23. 26. 41,4	3. 35. 50	10. 13,5	16,5
12	Th.	11. 21. 55. 47	23. 30. 21,5	3. 12. 16	9. 57,0	16,7
13	F.	11. 22. 55. 31	23. 34. 1,3	2. 48. 39	9. 40,3	16,9
14	Sa.	11. 23. 55. 13	23. 37. 40,8	2. 25. 1	9. 23,4	17,2
15	Sun.	11. 24. 54. 54	23. 41. 20,0	2. 1. 21	9. 6,2	17,4
16	M.	11. 25. 54. 33	23. 44. 59,1	1. 37. 40	8. 48,8	17,6
17	Tu.	11. 26. 54. 11	23. 48. 38,1	1. 13. 57	8. 31,2	17,8
18	W.	11. 27. 53. 46	23. 52. 16,9	0. 50. 15	8. 13,4	17,9
19	Th.	11. 28. 53. 20	23. 55. 55,4	0. 26. 32	7. 55,5	18,1
20	F.	11. 29. 52. 52	23. 59. 33,8	0. 2. 50	7. 37,4	18,2
21	Sa.	0. 0. 52. 21	0. 3. 12,1	0. 20. 51	7. 19,2	18,3
22	Sun.	0. 1. 51. 48	0. 6. 50,3	0. 44. 31	7. 0,9	18,4
23	M.	0. 2. 51. 14	0. 10. 28,4	1. 8. 9	6. 42,5	18,4
24	Tu.	0. 3. 50. 37	0. 14. 6,4	1. 31. 46	6. 24,1	18,6
25	W.	0. 4. 49. 58	0. 17. 44,4	1. 55. 20	6. 5,5	18,6
26	Th.	0. 5. 49. 16	0. 21. 22,2	2. 18. 52	5. 46,9	18,6
27	F.	0. 6. 48. 32	0. 25. 0,1	2. 42. 21	5. 28,3	18,7
28	Sa.	0. 7. 47. 46	0. 28. 38,0	3. 5. 46	5. 9,6	18,7
29	Sun.	0. 8. 46. 57	0. 32. 15,9	3. 29. 8	4. 50,9	18,6
30	M.	0. 9. 46. 6	0. 35. 53,8	3. 52. 25	4. 32,3	18,6
31	Tu.	0. 10. 45. 12	0. 39. 31,7	4. 15. 38	4. 13,7	

Days.	Time of $\odot$'s Semidiam. pass. Merid.	THE SUN'S			Place of the $\odot$'s Node.
	M. S.	Semi- diameter. M. S.	Hourly Motion. M. S.	Logarith. Distance.	S. D. M.
1	I. 5, 3	16. 10, 7	2. 30, 2	9. 996404	4. 6. 47
7	I. 4, 9	16. 9, 3	2. 29, 7	9. 997082	4. 6. 28
13	I. 4, 6	16. 7, 6	2. 29, 2	9. 997811	4. 6. 9
19	I. 4, 4	16. 6, 0	2. 28, 8	9. 998561	4. 5. 50
25	I. 4, 3	16. 4, 4	2. 28, 4	9. 999302	4. 5. 31

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	6. 16. 16	4	0. 41. 24	2	5. 47. 33 Im.
4	0. 45. 1	7	14. 0. 38	2	9. 11. 23 E.
5	19. 13. 47	11	3. 19. 54	9	9. 47. 53 Im.
7	13. 42. 33	14	16. 39. 14	9	13. 12. 17 E.
9	8. 11. 20	18	5. 58. 35	16	13. 48. 31 Im.
11	2. 40. 9	21	19. 17. 57	16	17. 13. 28 E.
12	21. 8. 58	25	8. 37. 19	23	17. 49. 17 Im.
14	15. 37. 48	28	21. 56. 41	23	21. 14. 49 E.
16	10. 6. 39			30	21. 50. 3 Im.
18	4. 35. 31			31	1. 16. 8 E.
19	23. 4. 23			IV. Satellite.	
21	17. 33. 14				
23	12. 2. 6			8	23. 20. 45 Im.
25	6. 30. 58			9	3. 14. 38 E.
27	0. 59. 51			25	17. 28. 22 Im.
28	19. 28. 43			25	21. 27. 18 E.
30	13. 57. 35				

THE PLANETS						
Days	Heliocentric		Geocentric		Declin.	Passage
	Long.	Lat.	Long.	Lat.		Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
MERCURY.					Inf. 6 19 ^d . 2 ^h 1 ^m 2 ^s .	
1	2. 24. 36	4. 23 N	11. 28. 57	1. 24 N	0. 52 N	1. 4
4	3. 13. 15	5. 54	0. 1. 56	2. 6	2. 41	1. 3
7	4. 1. 0	6. 46	0. 3. 43	2. 44	3. 59	0. 57
10	4. 17. 29	7. 0	0. 4. 13	3. 14	4. 38	0. 47
13	5. 2. 32	6. 43	0. 3. 26	3. 31	4. 36	0. 33
16	5. 16. 11	6. 3	0. 1. 35	3. 33	3. 54	0. 15
19	5. 28. 35	5. 9	11. 29. 5	3. 18	2. 41	23. 49
22	6. 9. 55	4. 8	11. 26. 26	2. 48	1. 8 N	23. 29
25	6. 20. 23	3. 2	11. 24. 3	2. 7	0. 25 S	23. 12
28	7. 0. 10	1. 55	11. 22. 20	1. 20	1. 48	22. 56
31	7. 9. 23	0. 48	11. 21. 26	0. 33	2. 54	22. 44
VENUS.					Gr. Elong. 12 ^d .	
1	6. 16. 30	2. 53 N	9. 25. 3	3. 34 N	17. 38 S	20. 56
7	6. 26. 9	2. 33	10. 0. 33	2. 55	17. 12	20. 57
13	7. 5. 48	2. 8	10. 6. 22	2. 17	16. 29	20. 59
19	7. 15. 24	1. 40	10. 12. 26	1. 40	15. 29	21. 2
25	7. 24. 58	1. 9	10. 18. 40	1. 5	14. 12	21. 6
MARS.						
1	1. 6. 24	0. 22 S	0. 14. 19	0. 15 S	5. 25 N	2. 3
7	1. 9. 50	0. 16	0. 18. 47	0. 10	7. 12	1. 58
13	1. 13. 14	0. 9	0. 23. 13	0. 6	8. 56	1. 52
19	1. 16. 36	0. 3 S	0. 27. 37	0. 2 S	10. 36	1. 47
25	1. 19. 55	0. 4 N	1. 1. 59	0. 2 N	12. 13	1. 41
JUPITER.						
1	9. 20. 3	0. 15 S	9. 27. 38	0. 13 S	20. 52 S	21. 7
7	9. 20. 33	0. 16	9. 28. 49	0. 14	20. 39	20. 50
13	9. 21. 4	0. 16	9. 29. 56	0. 15	20. 26	20. 32
19	9. 21. 34	0. 17	10. 1. 0	0. 16	20. 13	20. 15
25	9. 22. 5	0. 18	10. 2. 0	0. 17	20. 0	19. 57
SATURN.						
1	1. 29. 57	1. 58 S	1. 23. 57	1. 55 S	16. 55 N	4. 38
7	2. 0. 10	1. 58	1. 24. 22	1. 54	17. 3	4. 17
13	2. 0. 24	1. 58	1. 24. 50	1. 52	17. 11	3. 57
19	2. 0. 37	1. 57	1. 25. 21	1. 51	17. 20	3. 37
25	2. 0. 50	1. 57	1. 25. 55	1. 50	17. 29	3. 18

Days of the Month.	Days of the Week.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Sun.	3. 21. 57. 40	3. 28. 27. 20	1. 27. 32 S	0. 52. 55 S
2	M.	4. 4. 53. 40	4. 11. 16. 58	0. 17. 56 S	0. 16. 58 N
3	Tu.	4. 17. 37. 22	4. 23. 55. 4	0. 51. 21 N	1. 24. 49
4	W.	5. 0. 10. 7	5. 6. 22. 44	1. 57. 1	2. 27. 31
5	Th.	5. 12. 32. 57	5. 18. 40. 56	2. 56. 5	3. 22. 23
6	F.	5. 24. 46. 44	6. 0. 50. 33	3. 46. 9	4. 7. 14
7	Sa.	6. 6. 52. 29	6. 12. 52. 47	4. 25. 23	4. 40. 31
8	Sun.	6. 18. 51. 33	6. 24. 49. 7	4. 52. 29	5. 1. 13
9	M.	7. 0. 45. 45	7. 6. 41. 44	5. 6. 40	5. 8. 48
10	Tu.	7. 12. 37. 30	7. 18. 33. 26	5. 7. 37	5. 3. 8
11	W.	7. 24. 30. 0	8. 0. 27. 46	4. 55. 22	4. 44. 24
12	Th.	8. 6. 27. 7	8. 12. 28. 43	4. 30. 16	4. 13. 2
13	F.	8. 18. 33. 9	8. 24. 40. 56	3. 52. 51	3. 29. 48
14	Sa.	9. 0. 52. 46	9. 7. 9. 9	3. 4. 3	2. 35. 46
15	Sun.	9. 13. 30. 48	9. 19. 58. 9	2. 5. 10	1. 32. 33
16	M.	9. 26. 31. 44	10. 3. 11. 56	0. 58. 12 N	0. 22. 30 N
17	Tu.	10. 9. 59. 4	10. 16. 53. 15	0. 14. 6 S	0. 51. 5 S
18	W.	10. 23. 54. 33	11. 1. 2. 41	1. 27. 53	2. 3. 52
19	Th.	11. 8. 17. 22	11. 15. 37. 56	2. 38. 21	3. 10. 39
20	F.	11. 23. 3. 34	0. 0. 33. 18	3. 40. 3	4. 5. 55
21	Sa.	0. 8. 5. 57	0. 15. 40. 16	4. 27. 37	4. 44. 41
22	Sun.	0. 23. 14. 55	1. 0. 48. 36	4. 56. 46	5. 3. 37
23	M.	1. 8. 20. 2	1. 15. 48. 8	5. 5. 12	5. 1. 32
24	Tu.	1. 23. 11. 56	2. 0. 30. 40	4. 52. 51	4. 39. 27
25	W.	2. 7. 43. 45	2. 14. 50. 47	4. 21. 44	4. 0. 11
26	Th.	2. 21. 51. 39	2. 28. 46. 15	3. 35. 18	3. 7. 36
27	F.	3. 5. 34. 45	3. 12. 17. 23	2. 37. 35	2. 5. 50
28	Sa.	3. 18. 54. 27	3. 25. 26. 23	1. 32. 49	0. 58. 59 S
29	Sun.	4. 1. 53. 33	4. 8. 16. 25	0. 24. 47 S	0. 9. 18 N
30	M.	4. 14. 35. 24	4. 20. 50. 56	0. 42. 53 N	1. 15. 37
31	Tu.	4. 27. 3. 27	5. 3. 13. 17	1. 47. 8	2. 17. 6

THE MOON'S							
Days of the Month.	Days of the Week.	Age	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight.	Noon.	Midnight.
		Days	H. M.	D. M.	D. M.	D. M.	D. M.
1	Sun.	11	9. 3	113. 29	120. 23	20. 13 N	19. 37 N
2	M.	12	9. 55	127. 10	133. 50	18. 46	17. 41
3	Tu.	13	10. 45	140. 21	146. 43	16. 23	14. 54
4	W.	14	11. 32	152. 57	159. 4	13. 15	11. 28
5	Th.	15	12. 18	165. 3	170. 56	9. 34	7. 35
6	F.	16	13. 2	176. 43	182. 25	5. 32	3. 27 N
7	Sa.	17	13. 44	188. 4	193. 40	1. 20 N	0. 47 S
8	Su.	18	14. 26	199. 15	204. 50	2. 53 S	4. 57
9	M.	19	15. 9	210. 26	216. 4	6. 58	8. 54
10	Tu.	20	15. 53	221. 45	227. 31	10. 45	12. 30
11	W.	21	16. 38	233. 22	239. 19	14. 8	15. 38
12	Th.	22	17. 25	245. 23	251. 35	16. 58	18. 8
13	F.	23	18. 14	257. 54	264. 21	19. 6	19. 52
14	Sa.	24	19. 6	270. 56	277. 38	20. 24	20. 41
15	Sun.	25	20. 0	284. 27	291. 22	20. 42	20. 27
16	M.	26	20. 55	298. 21	305. 24	19. 55	19. 6
17	Tu.	27	21. 50	312. 30	319. 37	17. 59	16. 36
18	W.	28	22. 45	326. 44	333. 51	14. 57	13. 2
19	Th.	29	23. 40	340. 56	348. 1	10. 55	8. 36
20	F.	1	0	355. 5	2. 9	6. 7	3. 32 S
21	Sa.	2	0. 35	9. 12	16. 16	0. 53 S	1. 48 N
22	Sun.	3	1. 30	23. 21	30. 28	4. 27 N	7. 1
23	M.	4	2. 26	37. 37	44. 49	9. 28	11. 46
24	Tu.	5	3. 22	52. 4	59. 21	13. 52	15. 43
25	W.	6	4. 19	66. 41	74. 2	17. 19	18. 37
26	Th.	7	5. 16	81. 22	88. 41	19. 38	20. 20
27	F.	8	6. 12	95. 58	103. 9	20. 43	20. 49
28	Sa.	9	7. 7	110. 15	117. 13	20. 36	20. 6
29	Sun.	10	8. 0	124. 3	130. 45	19. 21	18. 22
30	M.	11	8. 51	137. 17	143. 40	17. 9	15. 45
31	Tu.	12	9. 39	149. 54	156. 0	14. 11	12. 28

		THE MOON'S				Proportional Logarithm.	
Days of the Month.	Days of the Week.	Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midnight.
1	Sun.	15.33	15.28	57. 3	56. 47	4990	5010
2	M.	15.24	15.20	56.32	56. 17	5029	5049
3	Tu.	15.16	15.12	56. 2	55. 48	5068	5086
4	W.	15. 8	15. 5	55.34	55.21	5104	5122
5	Th.	15. 2	14.59	55. 9	54.58	5137	5152
6	F.	14.56	14.53	54.48	54.39	5165	5177
7	Sa.	14.51	14.49	54.31	54.24	5187	5197
8	Sun.	14.48	14.47	54.19	54.15	5203	5209
9	M.	14.46	14.46	54.12	54.12	5213	5213
10	Tu.	14.47	14.48	54.14	54.18	5210	5205
11	W.	14.50	14.52	54.24	54.32	5197	5186
12	Th.	14.55	14.58	54.43	54.57	5171	5153
13	F.	15. 3	15. 8	55.13	55.31	5132	5108
14	Sa.	15.13	15.19	55.52	56. 15	5081	5051
15	Sun.	15.26	15.33	56.39	57. 5	5021	4987
16	M.	15.41	15.48	57.33	58. 1	4952	4917
17	Tu.	15.56	16. 4	58.30	58.58	4881	4846
18	W.	16.11	16.18	59.25	59.50	4813	4783
19	Th.	16.24	16.30	60.13	60.33	4755	4732
20	F.	16.34	16.38	60.49	61. 1	4712	4698
21	Sa.	16.40	16.40	61. 9	61.12	4689	4685
22	Sun.	16.40	16.38	61.11	61. 5	4686	4693
23	M.	16.36	16.32	60.55	60.41	4705	4722
24	Tu.	16.28	16.22	60.24	60. 4	4742	4766
25	W.	16.16	16.10	59.43	59.21	4792	4819
26	Th.	16. 4	15.57	58.57	58.33	4848	4877
27	F.	15.51	15.44	58. 9	57.45	4907	4937
28	Sa.	15.38	15.32	57.23	57. 2	4965	4991
29	Su.	15.27	15.22	56.41	56.22	5018	5042
30	M.	15.17	15.12	56. 3	55.46	5067	5089
31	Tu.	15. 8	15. 4	55.31	55.16	5108	5128

DISTANCES of MOON's Center from SUN, and from STARS EAST of her.

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Regulus.	35. 4. 29	33. 26. 32	31. 48. 45	30. 11. 10	28. 33. 47	26. 56. 36	25. 19. 37	23. 42. 51
2		22. 6. 18	20. 29. 58	18. 53. 52	17. 17. 58	15. 42. 17			
2	Spica ν	63. 25. 7	61. 50. 58	60. 17. 2	58. 43. 18	69. 43. 40	68. 8. 44	66. 34. 0	64. 59. 28
3		50. 57. 48	49. 25. 20	47. 53. 5	46. 21. 5	57. 9. 46	55. 36. 27	54. 3. 21	52. 30. 28
4		38. 44. 39	37. 14. 7	35. 43. 53	34. 13. 59	44. 49. 18	43. 17. 45	41. 46. 27	40. 15. 26
5		26. 49. 45	25. 22. 14	23. 55. 17	22. 28. 54	32. 44. 23	31. 15. 6	29. 46. 13	28. 17. 46
6	Antares.	60. 37. 52	59. 9. 19	57. 40. 56	56. 12. 43	66. 33. 38	65. 4. 28	63. 35. 26	62. 6. 34
7		48. 54. 10	47. 26. 58	45. 59. 57	44. 33. 8	54. 44. 40	53. 16. 47	51. 49. 4	50. 21. 32
8		37. 21. 52	35. 56. 16	34. 30. 57	33. 5. 56	43. 6. 29	41. 40. 0	40. 13. 41	38. 47. 42
9		26. 6. 17				31. 41. 14	30. 16. 53	28. 52. 56	27. 29. 24
10	α Aquilæ.	75. 30. 39	74. 13. 33	72. 56. 36	71. 39. 48				66. 34. 17
11		65. 18. 24	64. 2. 42	62. 47. 15	61. 32. 4	70. 23. 9	69. 6. 40	67. 50. 23	66. 34. 17
12		55. 20. 52				60. 17. 11	59. 2. 35	57. 48. 19	56. 34. 24

Day	Stars Names.	Noon.	IIIh.	VIh.	IXh.	Midnight.	XVh.	XVIIIh.	XXIh.
12	α Pegasi.	101. 46. 44	100. 24. 8	99. 1. 19	97. 38. 16	96. 15. 0	94. 51. 30	93. 27. 48	92. 3. 52
13		90. 39. 43	89. 15. 22	87. 50. 47	86. 26. 0	85. 1. 1			
10									
11	The Sun.	116. 19. 42	114. 58. 20	113. 36. 52	112. 15. 18	121. 44. 23	120. 23. 19	119. 2. 11	117. 40. 59
12		105. 25. 44	104. 3. 23	102. 40. 52	101. 18. 10	110. 53. 38	100. 31. 52	108. 9. 57	106. 47. 55
13		94. 21. 46	92. 57. 50	91. 33. 40	90. 9. 15	99. 55. 18	98. 32. 14	97. 8. 57	95. 45. 28
14		83. 3. 4	81. 36. 58	80. 10. 32	78. 43. 47	88. 44. 34	87. 19. 38	85. 54. 24	84. 28. 53
15		71. 24. 53	69. 56. 1	68. 26. 46	66. 57. 8	77. 16. 42	75. 49. 17	74. 21. 30	72. 53. 22
16		59. 23. 6	57. 51. 4	56. 18. 37	54. 45. 46	65. 27. 8	63. 56. 44	62. 25. 55	60. 54. 43
17		46. 55. 9	45. 19. 47	43. 44. 0	42. 7. 48	53. 12. 29	51. 38. 46	50. 4. 39	48. 30. 6
22	Aldebaran.	43. 29. 12	41. 36. 4	39. 43. 3	37. 50. 9	35. 57. 23	34. 4. 46	32. 12. 19	30. 20. 5
23		28. 28. 1	26. 36. 10	24. 44. 34	22. 53. 12	21. 2. 6			
23	Pollux.	58. 14. 53	56. 26. 35	54. 38. 40	52. 51. 9	65. 31. 28	63. 41. 50	61. 52. 31	60. 3. 32
24		43. 59. 51	42. 14. 57	40. 30. 36	38. 46. 48	51. 4. 1	49. 17. 17	47. 31. 1	45. 45. 12
25		30. 16. 42				37. 3. 32	35. 20. 52	33. 38. 50	31. 57. 26
26									
26	Regulus.	65. 12. 38	63. 28. 25	61. 44. 34	60. 1. 4	58. 17. 57	56. 35. 11	54. 52. 46	53. 10. 43
27		51. 29. 1	49. 47. 40	48. 6. 40	46. 26. 1	44. 45. 42	43. 5. 43	41. 26. 3	39. 46. 43
28		38. 7. 42	36. 28. 59	34. 50. 36	33. 12. 30	31. 34. 43	29. 57. 14	28. 20. 3	26. 43. 9
29		25. 6. 33	23. 30. 14	21. 54. 11	20. 18. 25	18. 42. 55			
29	Spica ♏	66. 26. 36	64. 52. 53	63. 19. 25	61. 46. 10	72. 43. 54	71. 9. 12	69. 34. 45	68. 0. 33
30		54. 3. 21	52. 31. 26	50. 59. 45	49. 28. 16	60. 13. 10	58. 40. 22	57. 7. 49	55. 35. 28
31		41. 54. 11				47. 57. 1	46. 25. 58	44. 55. 9	43. 24. 33
A. 1.									

DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Aldebaran.	45. 7. 15	46. 45. 17	42. 23. 7	50. 0. 46	51. 38. 13	53. 15. 28	54. 52. 33	56. 29. 25
2		58. 6. 6	59. 42. 35	61. 18. 53	62. 55. 0	64. 30. 56	66. 6. 40	67. 42. 14	69. 17. 36
3		70. 52. 48							
3	Pollux.	27. 46. 11	29. 16. 55	39. 47. 47	32. 18. 49	33. 50. 0	35. 21. 16	36. 52. 36	38. 23. 58
4		39. 55. 22	41. 26. 44	42. 58. 3	44. 29. 21	46. 0. 36	47. 31. 45	49. 2. 50	50. 33. 50
5		52. 4. 46	53. 35. 35	55. 6. 19	56. 36. 57	58. 7. 29			
5	Regulus.	27. 57. 56	29. 28. 57	30. 59. 49	32. 30. 34	21. 52. 33	23. 24. 6	24. 55. 30	26. 26. 47
6		40. 2. 20	41. 32. 18	43. 2. 11	44. 31. 57	34. 1. 11	35. 31. 39	37. 2. 0	38. 32. 13
7		51. 59. 11	53. 28. 21	54. 57. 26	56. 26. 27	46. 1. 37	47. 31. 9	49. 0. 36	50. 29. 57
8		63. 50. 35	65. 19. 15	66. 47. 52	68. 16. 28	57. 55. 24	59. 24. 17	60. 53. 6	62. 21. 52
9		75. 39. 18				69. 45. 3	71. 13. 37	72. 42. 11	74. 10. 45
10	Spica ♀	22. 46. 24	24. 10. 53	25. 35. 44	27. 0. 56	28. 26. 30	29. 52. 24	31. 18. 36	32. 45. 6
10		34. 11. 52	35. 38. 51	37. 6. 4	38. 33. 31	40. 1. 11	41. 29. 2	42. 57. 6	44. 25. 23
11		45. 53. 53	47. 22. 36	48. 51. 32	50. 20. 42	51. 50. 6	53. 19. 44	54. 49. 37	56. 19. 44
12		57. 50. 7	59. 20. 45	60. 51. 39	62. 22. 49	63. 54. 17	65. 26. 2	66. 58. 5	68. 30. 27
13									
14		70. 3. 8							

Days	Stars Names.	Num.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
14	Antares.	25. 8. 10	26. 35. 45	28. 4. 8	29. 33. 21	31. 3. 24	32. 34. 11	34. 5. 39	35. 37. 47
15		37. 10. 36	38. 43. 58	40. 17. 53	41. 52. 24	43. 27. 29	45. 3. 5	46. 39. 15	48. 15. 57
16		49. 53. 10	51. 30. 54	53. 9. 8	54. 47. 53	56. 27. 9	58. 6. 55	59. 47. 10	61. 27. 54
17		63. 9. 8	64. 50. 51	66. 33. 2	68. 15. 42	69. 58. 50	71. 42. 27	73. 26. 31	75. 11. 1
18		76. 55. 58	78. 41. 21	80. 27. 9	82. 13. 22	83. 59. 59	85. 47. c	87. 34. 23	89. 22. 8
19		91. 10. 17							
23	The Sun.	49. 32. 0	51. 13. 56	52. 55. 34	54. 36. 55	56. 17. 58	57. 58. 41	59. 39. 4	61. 19. 8
24		62. 58. 52	64. 38. 15	66. 17. 17	67. 55. 57	69. 34. 18	71. 12. 17	72. 49. 53	74. 27. 9
25		76. 4. 3	77. 40. 35	79. 16. 45	80. 52. 34	82. 28. 2	84. 3. 8	85. 37. 52	87. 12. 16
26		88. 46. 18	90. 19. 59	91. 53. 20	93. 26. 21	94. 59. 1	96. 31. 21	98. 3. 22	99. 35. 4
27		101. 6. 26	102. 37. 29	104. 8. 15	105. 38. 42	107. 8. 51	108. 38. 42	110. 8. 16	111. 37. 34
28		113. 6. 34	114. 35. 12	116. 3. 45	117. 31. 57	118. 59. 53	120. 27. 35		
29									
27	Aldebaran.	28. 43. 25	30. 24. 44	32. 5. 44	33. 46. 23	35. 26. 42	37. 6. 41	38. 46. 21	40. 25. 43
28		42. 4. 45	43. 43. 29	45. 21. 55	47. 0. 3	48. 37. 53	50. 15. 26	51. 52. 43	53. 29. 43
29		55. 6. 26	56. 42. 53	58. 19. 5	59. 55. 2	61. 30. 43	63. 6. 10	64. 41. 22	66. 16. 20
30		67. 51. 5							
30	Pollux.	24. 51. 24	26. 20. 55	27. 50. 38	29. 20. 34	30. 50. 43	32. 21. c	33. 51. 22	35. 21. 49
31		36. 52. 20	38. 22. 49	39. 53. 16	41. 23. 43	42. 54. 9	44. 24. 32	45. 54. 52	47. 25. 7
A.1		48. 55. 18							

Days of the Month.	Days of the Week.	Sundays, Holidays, Terms, &c.	Phases of the MOON.
			D. H. M.
			Full Moon - - - - - 3. 22. 10
			Last Quarter - - - - - 12. 1. 4
			New Moon - - - - - 18. 20. 20
			First Quarter - - - - - 25. 13. 29
1	W.		
2	Th.	[Chich.	
3	F.	Good Friday. Rd. B. of	
4	Sa.	St. Ambrose.	
5	Sun.	Easter-Day.	
6	M.	Easter-Monday.	
7	Tu.	Easter-Tuesday.	
8	W.		
9	Th.		
10	F.		
11	Sa.		
12	Sun.	1st Sun. after Easter. Low	
13	M.	[Sunday.	
14	Tu.		
15	W.	Oxf. and Camb. Ter. beg.	
16	Th.		
17	F.		
18	Sa.		
19	Sun.	2d Su. aft. East. Alphege.	
20	M.	From East. in 15 d. 1 ret.	
21	Tu.		
22	W.	Easter Term begins.	
23	Th.	St. George.	
24	F.		
25	Sa.	St. Mark. Pres. Mary born.	
26	Sun.	3d Sunday after Easter.	
27	M.	From East. in 3 w. 2 ret.	
28	Tu.		
29	W.		
30	Th.		

Other Phenomena.

D. H. M.

1. - - - 8 Stationary.

2. 17. 55 ☾ c w

7. 2. 12 ☾ γ w

6. 43 ☾ η w

11. 46 ☾ θ w

10. 6. 18 ☾ i ad μ 7

11. 5. 11 ☾ o 7

7. 36 ☾ π 7

12. - - - ♀ λ w diff. Lat. 4'.

11. 41 ☾ 4

14. 1. 9 ☾ γ v 8

4. 18 ☾ δ v 8

13. 17 ☾ i w

15. 19. 5 ☾ i ad ↓ w

19. 49 ☾ 2 ad ↓ w

17. - - - ♀ ♀ w diff. Lat. 17'.

19. 15. 32 ☉ enters 8

21. 1. 30 ☾ γ 8

3. 13 ☾ i ad δ 8

3. 38 ☾ 2 ad δ 8

7. 56 ☾ α 8

22. 8. 31 ☾ ζ 8

23. 4. 49 ☾ v η

18. 59 ☾ ζ η

25. 13. 42 ☾ δ w

29. 23. 51 ☾ c w

Days of the Month.	Days of the Week.	THE SUN'S			Equation	Diff.
		Longitude.	Rt. Ascens.	Declin.	of Time.	
			<i>in Time.</i>	<i>North.</i>	<i>Add.</i>	
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	W.	0. 11. 44. 16	0. 43. 9, 8	4. 38. 46	3. 55, 3	18, 3
2	Th.	0. 12. 43. 19	0. 46. 48, 0	5. 1. 50	3. 37, 0	18, 2
3	F.	0. 13. 42. 19	0. 50. 26, 3	5. 24. 48	3. 18, 8	18, 0
4	Sa.	0. 14. 41. 17	0. 54. 4, 7	5. 47. 40	3. 0, 8	17, 9
5	Sun.	0. 15. 40. 12	0. 57. 43, 4	6. 10. 26	2. 42, 9	17, 7
6	M.	0. 16. 39. 6	1. 1. 22, 1	6. 33. 6	2. 25, 2	17, 5
7	Tu.	0. 17. 37. 58	1. 5. 1, 1	6. 55. 39	2. 7, 7	17, 3
8	W.	0. 18. 36. 48	1. 8. 40, 3	7. 18. 5	1. 50, 4	17, 1
9	Th.	0. 19. 35. 35	1. 12. 19, 8	7. 40. 24	1. 33, 3	16, 8
10	F.	0. 20. 34. 21	1. 15. 59, 5	8. 2. 35	1. 16, 5	16, 4
11	Sa.	0. 21. 33. 6	1. 19. 39, 6	8. 24. 38	1. 0, 1	16, 2
12	Sun.	0. 22. 31. 49	1. 23. 20, 0	8. 46. 33	0. 43, 9	15, 8
13	M.	0. 23. 30. 31	1. 27. 0, 7	9. 8. 19	0. 28, 1	15, 4
14	Tu.	0. 24. 29. 11	1. 30. 41, 7	9. 29. 57	0. 12, 7	15, 1
15	W.	0. 25. 27. 50	1. 34. 23, 1	9. 51. 26	Sub. 2, 4	14, 7
16	Th.	0. 26. 26. 27	1. 38. 5, 0	10. 12. 45	0. 17, 1	14, 3
17	F.	0. 27. 25. 2	1. 41. 47, 2	10. 33. 53	0. 31, 4	13, 9
18	Sa.	0. 28. 23. 35	1. 45. 29, 7	10. 54. 51	0. 45, 3	13, 5
19	Sun.	0. 29. 22. 7	1. 49. 12, 7	11. 15. 39	0. 58, 8	13, 2
20	M.	1. 0. 20. 36	1. 52. 56, 2	11. 35. 15	1. 12, 0	12, 7
21	Tu.	1. 1. 19. 4	1. 56. 40, 0	11. 56. 40	1. 24, 7	12, 3
22	W.	1. 2. 17. 29	2. 0. 24, 2	12. 16. 53	1. 37, 0	11, 8
23	Th.	1. 3. 15. 52	2. 4. 8, 8	12. 36. 54	1. 48, 8	11, 4
24	F.	1. 4. 14. 14	2. 7. 54, 0	12. 56. 43	2. 0, 2	10, 9
25	Sa.	1. 5. 12. 33	2. 11. 39, 6	13. 16. 19	2. 11, 1	10, 5
26	Sun.	1. 6. 10. 50	2. 15. 25, 7	13. 35. 42	2. 21, 6	10, 0
27	M.	1. 7. 9. 5	2. 19. 12, 2	13. 54. 51	2. 31, 6	9, 5
28	Tu.	1. 8. 7. 18	2. 22. 59, 2	14. 13. 46	2. 41, 1	9, 0
29	W.	1. 9. 5. 29	2. 26. 46, 7	14. 32. 28	2. 50, 1	8, 5
30	Th.	1. 10. 3. 38	2. 30. 34, 8	14. 50. 55	2. 58, 6	

Days.	Time of ☉'s Semidiam. pass. Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter.	Hourly Motion.	Logarith. Distance.	S. D. M.
1	1. 4,4	16. 2,4	2. 27,7	0.000155	4. 5. 9
7	1. 4,5	16. 0,7	2. 27,2	0.000905	4. 4. 50
13	1. 4,7	15. 59,1	2. 26,6	0.001659	4. 4. 30
19	1. 5,1	15. 57,6	2. 26,1	0.002385	4. 4. 11
25	1. 5,5	15. 56,1	2. 25,6	0.003061	4. 3. 52

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	8. 26. 27	1	11. 16. 1	7	1. 50. 46 Im.
3	2. 55. 16	5	0. 35. 19	7	5. 17. 21 E.
4	21. 24. 6	8	13. 54. 34	14	5. 51. 19 Im.
6	15. 52. 57	12	3. 13. 44	14	9. 18. 24 E.
8	10. 21. 47	15	16. 32. 46	21	9. 51. 34 Im.
10	4. 50. 38	19	5. 51. 44	21	13. 19. 8 E.
11	23. 19. 25	22	19. 10. 33	28	13. 51. 29 Im.
13	17. 48. 11	26	8. 29. 13	28	17. 19. 34 E.
15	12. 16. 57	29	21. 47. 52		
17	6. 45. 42				
19	1. 14. 26				
20	19. 43. 7			IV. Satellite.	
22	14. 11. 49			11	11. 36. 8 Im.
24	8. 40. 28			11	15. 40. 1 E.
26	3. 9. 6			28	5. 42. 36 Im.
27	21. 37. 45			28	9. 51. 6 E.
29	16. 6. 22				

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage Merid.	
	Long.	Lat.	Long.	Lat.			
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	
M E R C U R Y. Gr. Elong. 15 ^d .							
1	7. 12. 21	0. 26 N	11. 21. 19	0. 18 N	3. 9 S	22. 42	
4	7. 21. 3	0. 38 S	11. 21. 31	0. 25 S	3. 45	22. 34	
7	7. 29. 30	1. 39	11. 22. 30	1. 3	3. 57	22. 28	
10	8. 7. 48	2. 37	11. 24. 7	1. 35	3. 48	22. 24	
13	8. 16. 2	3. 32	11. 26. 20	2. 2	3. 19	22. 22	
16	8. 24. 18	4. 22	11. 29. 4	2. 22	2. 32	22. 22	
19	9. 2. 42	5. 7	0. 2. 13	2. 37	1. 30	22. 24	
22	9. 11. 19	5. 46	0. 5. 46	2. 46	0. 15 S	22. 26	
25	9. 20. 15	6. 19	0. 9. 39	2. 50	1. 13 N	22. 29	
28	9. 29. 38	6. 43	0. 13. 5	2. 48	2. 54	22. 33	
30	10. 6. 12	6. 54	0. 16. 50	2. 44	4. 6	22. 36	
V E N U S.							
1	8. 6. 7	0. 31 N	10. 26. 9	0. 27 N	12. 24 S	21. 10	
7	8. 15. 38	0. 3 S	11. 2. 42	0. 3 S	10. 34	21. 14	
13	8. 25. 9	0. 36	11. 9. 21	0. 29	8. 31	21. 18	
19	9. 4. 39	1. 9	11. 16. 5	0. 52	6. 18	21. 21	
25	9. 14. 8	1. 40	11. 22. 53	1. 12	3. 56	21. 24	
M A R S.							
1	1. 23. 46	0. 11 N	1. 7. 4	0. 7 N	14. 0 N	1. 35	
7	1. 27. 2	0. 17	1. 11. 23	0. 11	15. 26	1. 30	
13	2. 0. 15	0. 23	1. 15. 40	0. 15	16. 47	1. 25	
19	2. 3. 26	0. 29	1. 19. 56	0. 19	18. 2	1. 20	
25	2. 6. 35	0. 35	1. 24. 10	0. 22	19. 11	1. 15	
J U P I T E R. □ 25 ^d . 22 ^h $\frac{1}{2}$.							
1	9. 22. 41	0. 18 S	10. 3. 7	0. 18 S	19. 46 S	19. 36	
7	9. 23. 11	0. 19	10. 3. 58	0. 18	19. 35	19. 18	
13	9. 23. 42	0. 20	10. 4. 45	0. 19	19. 25	18. 59	
19	9. 24. 12	0. 20	10. 5. 26	0. 20	19. 16	18. 40	
25	9. 24. 43	0. 21	10. 6. 2	0. 22	19. 8	18. 20	
S A T U R N.							
1	2. 1. 6	1. 57 S	1. 26. 38	1. 48 S	17. 40 N	2. 56	
7	2. 1. 19	1. 56	1. 27. 17	1. 47	17. 50	2. 37	
13	2. 1. 32	1. 56	1. 27. 57	1. 46	18. 0	2. 17	
19	2. 1. 45	1. 55	1. 28. 39	1. 45	18. 10	1. 58	
25	2. 1. 59	1. 55	1. 29. 22	1. 45	18. 20	1. 38	

Days of the Month.	Days of the Week.	THE MOON'S							
		Longitude.				Latitude.			
		Noon.		Midnight.		Noon.		Midnight.	
		S. D. M. S.		S. D. M. S.		D. M. S.		D. M. S.	
1	W.	5. 9. 20. 49		5. 15. 26. 18		2. 45. 16 N		3. 11. 21 N	
2	Th.	5. 21. 30. 1		5. 27. 32. 13		3. 35. 3		3. 56. 13	
3	F.	6. 3. 33. 1		6. 9. 32. 40		4. 14. 37		4. 30. 8	
4	Sa.	6. 15. 31. 18		6. 21. 29. 4		4. 42. 35		4. 51. 55	
5	Sun.	6. 27. 26. 6		7. 3. 22. 38		4. 58. 0		5. 0. 51	
6	M.	7. 9. 18. 48		7. 15. 14. 50		5. 0. 25		4. 56. 44	
7	Tu.	7. 21. 10. 56		7. 27. 7. 30		4. 49. 50		4. 39. 46	
8	W.	8. 3. 4. 43		8. 9. 3. 0		4. 26. 38		4. 10. 31	
9	Th.	8. 15. 2. 48		8. 21. 4. 28		3. 51. 33		3. 29. 53	
10	F.	8. 27. 8. 35		9. 3. 15. 39		3. 5. 41		2. 39. 9	
11	Sa.	9. 9. 26. 12		9. 15. 40. 54		2. 10. 29		1. 39. 54	
12	Sun.	9. 22. 0. 14		9. 28. 24. 53		1. 7. 45 N		0. 34. 17 N	
13	M.	10. 4. 55. 22		10. 11. 32. 11		0. 0. 12 S		0. 35. 10 S	
14	Tu.	10. 18. 15. 51		10. 25. 6. 38		1. 10. 16		1. 44. 53	
15	W.	11. 2. 4. 46		11. 9. 10. 16		2. 18. 34		2. 50. 40	
16	Th.	11. 16. 23. 4		11. 23. 42. 40		3. 20. 34		3. 47. 38	
17	F.	0. 1. 8. 28		0. 8. 39. 40		4. 11. 10		4. 30. 37	
18	Sa.	0. 16. 15. 7		0. 23. 53. 35		4. 45. 30		4. 55. 23	
19	Sun.	1. 1. 33. 37		1. 9. 13. 45		5. 0. 0		4. 59. 14	
20	M.	1. 16. 52. 27		1. 24. 28. 23		4. 53. 6		4. 41. 45	
21	Tu.	2. 2. 0. 10		2. 9. 26. 47		4. 25. 37		4. 5. 6	
22	W.	2. 16. 47. 20		2. 24. 1. 13		3. 40. 44		3. 13. 10	
23	Th.	3. 1. 8. 4		3. 8. 7. 41		2. 42. 58		2. 10. 45	
24	F.	3. 15. 0. 5		3. 21. 45. 28		1. 37. 10		1. 2. 45 S	
25	Sa.	3. 28. 24. 11		4. 4. 56. 37		0. 28. 0 S		0. 6. 34 N	
26	Sun.	4. 11. 23. 19		4. 17. 44. 46		0. 40. 32 N		1. 13. 34	
27	M.	4. 24. 1. 34		5. 0. 14. 16		1. 45. 15		2. 15. 19	
28	Tu.	5. 6. 23. 26		5. 12. 29. 33		2. 43. 29		3. 9. 31	
29	W.	5. 18. 33. 10		5. 24. 34. 40		3. 33. 11		3. 54. 18	
30	Th.	6. 0. 34. 33		6. 6. 33. 2		4. 12. 42		4. 28. 13	

THE MOON'S							
Days of the Month.	Days of the Week.	Age.	Passage Merid.	Right Ascension.		Declination.	
				Noon.	Midnight.	Noon.	Midnight.
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
1	W.	13	10. 23	161. 59	167. 51	10. 37 N	8. 41 N
2	Th.	14	11. 7	173. 37	179. 19	6. 40	4. 35
3	F.	15	11. 50	184. 57	190. 32	2. 29 N	0. 21 N
4	Sa.	16	12. 32	196. 6	201. 40	1. 46 S	3. 52 S
5	Sun.	17	13. 14	207. 15	212. 52	5. 56	7. 56
6	M.	18	13. 57	218. 32	224. 15	9. 52	11. 42
7	Tu.	19	14. 42	230. 3	235. 56	13. 25	15. 0
8	W.	20	15. 29	241. 55	248. 1	16. 26	17. 42
9	Th.	21	16. 17	254. 13	260. 32	18. 47	19. 40
10	F.	22	17. 7	266. 57	273. 29	20. 20	20. 46
11	Sa.	23	17. 58	280. 6	286. 49	20. 57	20. 53
12	Sun.	24	18. 51	293. 35	300. 25	20. 33	19. 56
13	M.	25	19. 44	307. 17	314. 10	19. 3	17. 54
14	Tu.	26	20. 37	321. 4	327. 59	16. 29	14. 49
15	W.	27	21. 31	334. 55	341. 51	12. 54	10. 47
16	Th.	28	22. 25	348. 47	355. 44	8. 28	5. 59
17	F.	29	23. 20	2. 43	9. 44	3. 23 S	0. 42 S
18	Sa.	1	0	16. 48	23. 56	2. 0 N	4. 42 N
19	Sun.	2	0. 16	31. 9	38. 26	7. 20	9. 51
20	M.	3	1. 13	45. 49	53. 17	12. 12	14. 21
21	Tu.	4	2. 12	60. 49	68. 25	16. 15	17. 51
22	W.	5	3. 11	76. 2	83. 39	19. 9	20. 7
23	Th.	6	4. 10	91. 13	98. 42	20. 44	21. 2
24	F.	7	5. 7	106. 5	113. 20	21. 0	20. 40
25	Sa.	8	6. 2	120. 25	127. 20	20. 2	19. 9
26	Sun.	9	6. 54	134. 3	140. 35	18. 2	16. 42
27	M.	10	7. 43	146. 56	153. 8	15. 11	13. 30
28	Tu.	11	8. 29	159. 11	165. 5	11. 42	9. 48
29	W.	12	9. 13	170. 53	176. 35	7. 48	5. 44
30	Th.	13	9. 56	182. 12	187. 47	3. 38	1. 30

Days of the Month.	Days of the Week.	THE M O O N ' s				Proportional	
		Semidiameter.		Hor. Parallax.		Logarithm.	
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
1	W.	15. 0	14. 57	55. 4	54. 52	5144	5159
2	Th.	14. 54	14. 52	54. 42	54. 33	5173	5185
3	F.	14. 50	14. 48	54. 26	54. 19	5194	5203
4	Sa.	14. 47	14. 46	54. 14	54. 10	5210	5215
5	Sun.	14. 45	14. 45	54. 7	54. 6	5219	5221
6	M̄.	14. 45	14. 45	54. 6	54. 7	5221	5219
7	Tu.	14. 46	14. 47	54. 10	54. 15	5215	5209
8	W.	14. 49	14. 51	54. 22	54. 31	5199	5187
9	Th.	14. 54	14. 58	54. 42	54. 54	5173	5157
10	F.	15. 2	15. 6	55. 9	55. 26	5137	5115
11	Sa.	15. 11	15. 17	55. 45	56. 7	5090	5062
12	Sun.	15. 24	15. 31	56. 30	56. 55	5032	5000
13	M.	15. 38	15. 45	57. 21	57. 49	4967	4932
14	Tu.	15. 53	16. 1	58. 18	58. 47	4896	4860
15	W.	16. 9	16. 16	59. 16	59. 43	4824	4792
16	Th.	16. 23	16. 30	60. 9	60. 32	4760	4733
17	F.	16. 35	16. 40	60. 52	61. 9	4709	4689
18	Sa.	16. 43	16. 45	61. 22	61. 30	4673	4664
19	Sun.	16. 46	16. 45	61. 33	61. 30	4660	4664
20	M.	16. 44	16. 40	61. 23	61. 11	4672	4686
21	Tu.	16. 36	16. 31	60. 55	60. 35	4705	4729
22	W.	16. 25	16. 18	60. 13	59. 48	4755	4786
23	Th.	16. 10	16. 3	59. 21	58. 53	4819	4853
24	F.	15. 55	15. 47	58. 25	57. 57	4887	4922
25	Sa.	15. 40	15. 33	57. 30	57. 4	4956	4989
26	Sun.	15. 26	15. 20	56. 39	56. 16	5021	5050
27	M.	15. 14	15. 9	55. 55	55. 36	5077	5102
28	Tu.	15. 4	15. 0	55. 18	55. 3	5125	5145
29	W.	14. 56	14. 53	54. 49	54. 38	5163	5178
30	Th.	14. 51	14. 49	54. 29	54. 21	5190	5201

DISTANCES of MOON's Center from SUN, and from STARS EAST of her.

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Spica η	41. 54. 11	40. 24. 2	38. 54. 8	37. 24. 29	35. 55. 5	34. 25. 55	32. 57. 4	31. 28. 32
2		30. 0. 18	28. 32. 20	27. 4. 50	25. 37. 48	24. 11. 14	22. 45. 15	21. 19. 57	19. 55. 22
3		18. 31. 27							
3	Antares.	63. 53. 52	62. 25. 21	60. 56. 58	59. 28. 42	58. 0. 34	56. 32. 33	55. 4. 39	53. 36. 52
4		52. 9. 14	50. 41. 43	49. 14. 21	47. 47. 7	46. 20. 1	44. 53. 4	43. 26. 17	41. 59. 41
5		40. 33. 15	39. 6. 58	37. 40. 55	36. 15. 5	34. 49. 31	33. 24. 11	31. 59. 10	30. 34. 26
6		29. 10. 1							
6	α Aquilæ.	78. 27. 31	77. 10. 11	75. 53. 0	74. 35. 57	73. 19. 4	72. 2. 21	70. 45. 49	69. 29. 29
7		68. 13. 20	66. 57. 22	65. 41. 40	64. 26. 12	63. 11. 0	61. 56. 5	60. 41. 30	59. 27. 16
8		58. 13. 23	56. 59. 51	55. 46. 47	54. 34. 12	53. 22. 4	52. 10. 27	50. 59. 27	49. 49. 5
9		48. 39. 22							
9	α Pegasi.	93. 57. 55	92. 34. 55	91. 11. 47	89. 48. 29	88. 25. 3	87. 1. 28	85. 37. 43	84. 13. 50
10		82. 49. 49	81. 25. 40	80. 1. 22	78. 36. 57	77. 12. 24	75. 47. 43	74. 22. 55	72. 58. 0
11		71. 32. 59	70. 7. 50	68. 42. 36	67. 17. 17	65. 51. 54	64. 26. 26	63. 0. 56	61. 35. 25
12		60. 9. 52							

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
9	The Sun.	113. 23. 35	111. 59. 44	110. 35. 40	120. 19. 49	118. 56. 57	117. 33. 54	116. 10. 39	114. 47. 13
10		102. 6. 22	100. 40. 34	99. 14. 28	109. 11. 23	107. 46. 53	106. 22. 8	104. 57. 8	103. 31. 53
11		90. 31. 34	89. 3. 17	87. 34. 38	97. 48. 5	96. 21. 24	94. 54. 25	93. 27. 7	91. 59. 30
12		78. 35. 9	77. 3. 54	75. 32. 15	86. 5. 39	84. 36. 18	83. 6. 35	81. 36. 29	80. 6. 0
13		66. 13. 39	64. 39. 4	63. 4. 4	74. 0. 11	72. 27. 43	70. 54. 50	69. 21. 31	67. 47. 48
14		53. 25. 9	51. 47. 10	50. 8. 48	61. 28. 39	59. 52. 48	58. 16. 31	56. 39. 49	55. 2. 42
15		40. 10. 20			48. 30. 1	46. 50. 51	45. 11. 17	43. 31. 20	41. 51. 0
16		64. 26. 47	62. 34. 10	60. 41. 49	58. 49. 43	56. 57. 54	55. 6. 22	53. 15. 10	51. 24. 20
20	Pollux.	49. 33. 50	47. 43. 43	45. 54. 2	44. 4. 49	42. 16. 5	40. 27. 50	38. 40. 9	36. 53. 3
21		35. 6. 31							
22		70. 16. 16	68. 27. 11	66. 38. 32	64. 50. 17	63. 2. 28	61. 15. 3	59. 28. 3	57. 41. 28
23	Regulus.	55. 55. 19	54. 9. 37	52. 24. 21	50. 39. 30	48. 55. 6	47. 11. 8	45. 27. 37	43. 44. 31
24		42. 1. 52	40. 19. 38	38. 37. 50	36. 56. 28	35. 15. 30	33. 34. 58	31. 54. 50	30. 15. 8
25		28. 35. 50	26. 56. 56	25. 18. 27	23. 40. 22	22. 2. 40			
25	Spica η g.	69. 38. 27	68. 3. 5	66. 28. 3	64. 53. 21	76. 3. 30	74. 26. 41	72. 50. 15	71. 14. 10
26		57. 4. 41	55. 31. 53	53. 59. 22	52. 27. 9	63. 18. 59	61. 44. 56	60. 11. 12	58. 37. 47
27		44. 50. 18	43. 19. 46	41. 49. 30	40. 19. 32	50. 55. 13	49. 23. 34	47. 52. 12	46. 21. 6
28		32. 53. 58				38. 49. 50	37. 20. 25	35. 51. 18	34. 22. 29
29	Antares.	78. 42. 6	77. 12. 40	75. 43. 23	74. 14. 14	72. 45. 13	71. 16. 20	69. 47. 35	68. 18. 58
30		66. 50. 29	65. 22. 8	63. 53. 55	62. 25. 49	60. 57. 49	59. 29. 56	58. 2. 9	56. 34. 28
M. 1		55. 6. 52							

DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.

Days	Stars Names.	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
1	Regulus.	12.34.	1	14.5.16	15.36.26	17.7.31	18.38.31	20.9.26	21.40.15	23.10.59	23.10.59	25.13.20	26.38.35	28.4.9	29.30.4	31.42.5	33.13.22
2		24.41.38	26.12.11	27.42.37	29.12.58	30.43.13	32.13.21	33.43.24	35.13.22	37.10.10	37.10.10	39.37.59	41.5.33	43.51.28	45.30.47	47.10.10	49.2.42
3		36.43.15	38.13.2	39.42.45	41.12.23	42.41.56	44.11.25	45.40.49	47.10.10	49.2.42	49.2.42	51.22.59	53.51.51	56.19.8	58.38.55	60.16.19	62.14.14
4		48.39.26	50.8.38	51.37.46	53.6.51	54.35.53	56.4.52	57.33.48	59.2.42	61.48.38	61.48.38	63.18.46	65.49.7	67.55.19	69.24.0	71.52.40	73.10.59
5		60.31.33	62.0.22	63.29.9	64.57.54	66.26.37	68.1.48	69.24.0	70.52.40	72.10.59	72.10.59	74.10.10	76.10.10	78.10.10	80.10.10	82.10.10	84.10.10
6	Spica μ	19.36.59	21.0.19	22.24.10	23.48.30	25.13.20	26.38.35	28.4.9	29.30.4	31.42.5	33.13.22	35.13.22	37.10.10	39.37.59	41.5.33	43.51.28	45.30.47
7		30.56.19	32.22.45	33.40.24	35.16.17	36.43.22	38.10.35	39.37.59	41.5.33	43.51.28	45.30.47	47.10.10	49.2.42	51.22.59	53.51.51	56.19.8	58.38.55
8		42.33.17	44.1.10	45.29.12	46.57.24	48.25.45	49.54.17	51.22.59	53.51.51	56.19.8	58.38.55	60.16.19	62.14.14	64.49.7	66.26.37	68.1.48	70.52.40
9		54.20.51	55.50.2	57.19.24	58.48.58	60.18.42	61.48.38	63.18.46	65.49.7	67.55.19	69.24.0	71.52.40	73.10.59	75.13.20	77.16.17	79.18.42	81.21.15
10		66.19.40	68.1.48	69.24.0	70.52.40	72.10.59	74.10.10	76.10.10	78.10.10	80.10.10	82.10.10	84.10.10	86.10.10	88.10.10	90.10.10	92.10.10	94.10.10
10	Antares.	21.36.51	23.0.48	24.25.38	25.51.21	27.17.56	28.45.18	30.13.21	31.42.5	33.13.22	35.13.22	37.10.10	39.37.59	41.5.33	43.51.28	45.30.47	47.10.10
11		33.11.29	34.41.23	36.11.49	37.42.48	39.14.16	40.46.11	42.18.35	43.51.28	45.30.47	47.10.10	49.2.42	51.22.59	53.51.51	56.19.8	58.38.55	60.16.19
12		45.24.48	46.58.35	48.32.50	50.7.32	51.42.41	53.18.16	54.54.18	56.30.47	58.7.32	59.2.42	61.48.38	63.18.46	65.49.7	67.55.19	69.24.0	71.52.40
13		58.7.43	59.45.5	61.22.55	63.1.12	64.39.56	66.19.8	67.58.48	69.24.0	71.52.40	73.10.59	75.13.20	77.16.17	79.18.42	81.21.15	83.23.33	85.25.51
14		71.19.30	73.0.32	74.42.1	76.23.58	78.6.22	79.49.14	81.32.33	83.16.19	85.25.51	87.18.42	89.10.10	91.1.48	93.13.21	95.16.17	97.19.40	99.22.14
15		85.0.32	86.45.12	88.30.18	90.15.50	92.1.48	93.48.13	95.35.1	97.22.14	99.2.42	100.10.10	102.10.10	104.10.10	106.10.10	108.10.10	110.10.10	112.10.10
16		99.9.51	100.57.51	102.46.13	104.34.55	106.23.59	108.13.21	110.10.10	112.10.10	114.10.10	116.10.10	118.10.10	120.10.10	122.10.10	124.10.10	126.10.10	128.10.10

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
16	α Aquilæ.	68. 20. 38	69. 56. 53	71. 33. 42	73. 11. 4	62. 2. 49	63. 36. 8	65. 10. 13	66. 45. 3
17		81. 24. 40				74. 48. 58	76. 27. 22	78. 6. 6	79. 45. 12
18									
21	The Sun.	44. 37. 3	46. 18. 2	47. 58. 41	49. 38. 59	37. 49. 49	39. 38. 5	41. 14. 3	42. 55. 42
22		57. 54. 38	59. 32. 33	61. 10. 3	62. 47. 9	51. 18. 54	52. 58. 25	54. 37. 33	56. 16. 18
23		70. 46. 20	72. 20. 55	73. 55. 5	75. 28. 51	64. 23. 50	66. 0. 5	67. 35. 55	69. 11. 20
24		83. 11. 39	84. 43. 2	86. 14. 2	87. 44. 40	77. 2. 12	78. 35. 9	80. 7. 42	81. 39. 52
25		95. 12. 28	96. 40. 59	98. 9. 11	99. 37. 4	89. 14. 56	90. 44. 50	92. 14. 23	93. 43. 36
26		106. 51. 59	108. 18. 7	109. 43. 59	111. 9. 36	101. 4. 39	102. 31. 55	103. 58. 53	105. 25. 35
27		118. 14. 2	119. 38. 14	121. 2. 15		112. 34. 57	114. 0. 4	115. 24. 57	116. 49. 36
28									
25	Pollux.	21. 46. 56	23. 16. 47	24. 47. 3	26. 17. 43	15. 55. 42	17. 22. 4	18. 49. 29	20. 17. 49
26		33. 53. 11	35. 24. 15	36. 55. 15	38. 26. 12	27. 48. 48	29. 19. 48	30. 50. 52	32. 21. 59
27		45. 59. 35	47. 29. 54	49. 0. 6	50. 30. 11	39. 57. 7	41. 27. 53	42. 58. 33	44. 29. 7
28						52. 0. 9			
28	Regulus.	21. 46. 22	23. 16. 41	24. 46. 53	26. 16. 59	15. 43. 54	17. 14. 42	18. 45. 23	20. 15. 56
29		33. 45. 55	35. 15. 24	36. 44. 47	38. 14. 6	27. 46. 58	29. 16. 51	30. 46. 38	32. 16. 20
30		45. 39. 43				39. 43. 20	41. 12. 30	42. 41. 38	44. 10. 43
M. 1									

CONFIGURATIONS of the SATELLITES of JUPITER
at 4 o'Clock in the Morning.

1		.4		3.	⊙	.1	.2	
2		.4		3.	1.	⊙		2●
3			.3 .4 .2		⊙	.1		
4	4.0		.1	.3	⊙	.2		
5					⊙	1. 2. .4 .3		
6			2.	.1	⊙		3. .4	
7	1●		.2		⊙	3.	.4	
8	1.0		3.		⊙	.2	.4	
9	2●		3.	1.	⊙		4.	
10			.3 .2		⊙	.1		4.
11			1. .3		⊙	.2	4.	
12					⊙	4. 1. 2. .3		
13				.1	2 6 4. ⊙		.3	
14			4.	.2	⊙	1.	3.	
15		4.		3. .1	⊙	.2		
16		4.	3.	1.	⊙	2.		
17		4	.3	2.	⊙	.1		
18		.4		.3	1. ⊙			2.0
19		.4			⊙	.1 .3		
20			.4 .1	2.	⊙		.3	
21			.2		⊙	.4	1. 2. 3.	
22	3●			.1	⊙	.2 .4		
23	1●		3.		⊙	2.	.4	
24			.3	2.	⊙	.1	.4	
25	2.0		.3	1.	⊙		.4	
26					⊙	1 6 3 2.		4.
27			1. 2.		⊙		.3	4.
28			.2		⊙	1. 3 6 4		
29	3●		.1		⊙	.2		
30			3. 4.		⊙	1. 2.		

Days of the Month.	Days of the Week.	Sundays, Holidays, Terms, &c.	Phases of the MOON.
			D. H. M.
			Full Moon - - - - - 3. 14. 43
			Last Quarter - - - - - 11. 12. 48
			New Moon - - - - - 18. 3. 48
			First Quarter - - - - - 25. 2. 33
			Other Phenomena.
			D. H. M.
1	F.	St. Philip and St. James.	4. 8. 18 ☾ ☽
2	Sa.		11. 45 Im. of ☾ * 9' N. of ☾'s
3	Sun.	4th Su. aft East. Inv. Cross	12. 40 1/2 Em. * 12 1/2 N. [Cent.
4	M.	From East. in 1 mo. 3 ret.	17. 50 ☾ ☽
5	Tu.		7. 12. 19 ☾ 1 ad μ ♄
6	W.	John Evang. ante Port. L.	8. 11. 22 ☾ ☽
7	Th.		13. 48 ☾ ☽
8	F.		10. 10. 56 ☾ ☽
9	Sa.		11. 8. 39 ☾ ☽
10	Sun.	5th S. aft East. Rogat. Sun.	11. 50 ☾ ☽
11	M.	From East. in 5 w. 4 ret.	21. 9 ☾ ☽
12	Tu.		13. 3. 56 ☾ 1 ad ↓ ☽
13	W.		4. 41 ☾ 2 ad ↓ ☽
14	Th.	Ascen. Day. Holy Thursday	20. 16. 4 ☾ enters ☿
15	F.	On mor. of Asc. 5 ret.	21. 4. 13 ☾ ☽ ☿
16	Sa.		19. 13 ☾ ☽ ☿
17	Sun.	Sunday after Ascens. Day.	22. 21. 39 ☾ ☽ ☿
18	M.	Easter Term ends.	25. - - - ☽ Stationary.
19	Tu.	2. Charl. bo. 1744. Dunst.	27. 6. 5 ☾ ☽ ☿
20	W.		31. 14. 28 ☾ ☽ ☿
21	Th.	Oxford Term ends.	18. 58 ☾ ☽ ☿
22	F.	Prs. Elizabeth born.	23. 58 ☾ ☽ ☿
23	Sa.		
24	Sun.	Whit-Sunday.	
25	M.	Whit-Monday.	
26	Tu.	Whit-Tues. Aug. 1st A. C.	
27	W.	Ven. Bede. Ca. T. div. n.	
28	Th.		
29	F.	K. Charles II. restored.	
30	Sa.		
31	Sun.	Trinity Sunday.	

Days of the Month.	Days of the Week.	THE SUN'S			Equation of Time.	Diff.
		Longitude.	Rt. Ascens. in Time.	Declin. North.		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	F.	1. 11. 1. 44	2. 34. 23, 4	15. 9. 7	3. 6, 5	
2	Sa.	1. 11. 59. 49	2. 38. 12, 5	15. 27. 4	3. 14, 0	7, 5
3	Sun.	1. 12. 57. 53	2. 42. 2, 1	15. 44. 46	3. 20, 9	6, 9
4	M.	1. 13. 55. 54	2. 45. 52, 3	16. 2. 12	3. 27, 3	6, 4
5	Tu.	1. 14. 53. 54	2. 49. 43, 0	16. 19. 23	3. 33, 1	5, 8
6	W.	1. 15. 51. 52	2. 53. 34, 3	16. 36. 17	3. 38, 3	5, 2
7	Th.	1. 16. 49. 49	2. 57. 26, 2	16. 52. 55	3. 43, 0	4, 7
8	F.	1. 17. 47. 45	3. 1. 18, 7	17. 9. 16	3. 47, 1	4, 1
9	Sa.	1. 18. 45. 40	3. 5. 11, 7	17. 25. 21	3. 50, 6	3, 5
10	Sun.	1. 19. 43. 33	3. 9. 5, 4	17. 41. 7	3. 53, 4	2, 8
11	M.	1. 20. 41. 25	3. 12. 59, 7	17. 56. 37	3. 55, 7	2, 3
12	Tu.	1. 21. 39. 16	3. 16. 54, 5	18. 11. 48	3. 57, 4	1, 7
13	W.	1. 22. 37. 6	3. 20. 50, 0	18. 26. 42	3. 58, 5	1, 1
14	Th.	1. 23. 34. 55	3. 24. 46, 1	18. 41. 17	3. 59, 0	0, 5
15	F.	1. 24. 32. 43	3. 28. 42, 7	18. 55. 33	3. 58, 9	0, 1
16	Sa.	1. 25. 30. 29	3. 32. 40, 0	19. 9. 30	3. 58, 2	0, 7
17	Sun.	1. 26. 28. 15	3. 36. 37, 8	19. 23. 8	3. 56, 9	1, 3
18	M.	1. 27. 25. 59	3. 40. 36, 2	19. 36. 25	3. 55, 0	1, 9
19	Tu.	1. 28. 23. 42	3. 44. 35, 2	19. 49. 23	3. 52, 6	2, 4
20	W.	1. 29. 21. 24	3. 48. 34, 7	20. 2. 1	3. 49, 7	2, 9
21	Th.	2. 0. 19. 3	3. 52. 34, 7	20. 14. 18	3. 46, 2	3, 5
22	F.	2. 1. 16. 42	3. 56. 35, 3	20. 26. 15	3. 42, 2	4, 0
23	Sa.	2. 2. 14. 19	4. 0. 36, 4	20. 37. 50	3. 37, 7	4, 5
24	Sun.	2. 3. 11. 55	4. 4. 38, 0	20. 49. 5	3. 32, 7	5, 0
25	M.	2. 4. 9. 29	4. 8. 40, 1	20. 59. 58	3. 27, 2	5, 5
26	Tu.	2. 5. 7. 2	4. 12. 42, 6	21. 10. 29	3. 21, 2	6, 0
27	W.	2. 6. 4. 34	4. 16. 45, 6	21. 20. 38	3. 14, 7	6, 5
28	Th.	2. 7. 2. 4	4. 20. 49, 1	21. 30. 26	3. 7, 8	6, 9
29	F.	2. 7. 59. 32	4. 24. 53, 0	21. 39. 51	3. 0, 5	7, 3
30	Sa.	2. 8. 57. 0	4. 28. 57, 4	21. 48. 53	2. 52, 7	7, 8
31	Sun.	2. 9. 54. 26	4. 33. 2, 1	21. 57. 32	2. 44, 5	8, 2

Days.	Time of ☉'s Semi-diam. pass, Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter.	Hourly Motion.	Logarith. Distance.	S. D. M.
1	1. 5,9	15. 54,6	2. 25,3	0.003696	4. 3. 33
7	1. 6,4	15. 53,2	2. 24,9	0.004313	4. 3. 14
13	1. 6,9	15. 52,0	2. 24,6	0.004902	4. 2. 55
19	1. 7,4	15. 50,8	2. 24,2	0.005425	4. 2. 36
25	1. 7,8	15. 49,8	2. 23,9	0.005870	4. 2. 17

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.			II. Satellite.			III. Satellite.		
<i>Immersion.</i>			<i>Immersion.</i>					
Days.	H. M. S.		Days.	H. M. S.		Days.	H. M. S.	
1	10. 34. 54		3	11. 6. 28		5	17. 51. 8 Im.	
3	5. 3. 28		7	0. 24. 48		5	21. 19. 34 E.	
4	23. 31. 57		10	13. 43. 2		12	21. 50. 19 Im.	
6	18. 0. 28		14	3. 1. 2		13	1. 19. 9 E.	
8	12. 28. 57		17	16. 18. 54		20	1. 40. 1 Im.	
10	6. 57. 21		21	5. 36. 41		20	5. 18. 17 E.	
12	1. 25. 48		24	18. 54. 15		27	5. 47. 24 Im.	
13	19. 54. 11		28	8. 11. 48		27	9. 17. 4 E.	
*15	14. 22. 31		31	21. 29. 5				
17	8. 50. 52							
19	3. 19. 11							
20	21. 47. 26							
22	16. 15. 43							
24	10. 43. 57							
26	5. 12. 9							
27	23. 40. 22							
29	18. 8. 33							
31	12. 36. 42							
						IV. Satellite.		
						14	23. 47. 32 Im.	
						15	4. 0. 7 E.	
						31	17. 50. 10 Im.	
						31	22. 6. 50 E.	

THE PLANETS						
Days	Heliocentric		Geocentric		Passage	
	Long.	Lat.	Long.	Lat.	Declin.	Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
M E R C U R Y. Sup δ 24 ^d . 16 ^h $\frac{1}{2}$.						
1	10. 9. 35	6. 57 S	0. 18. 21	2. 42 S	4. 43 N	22. 40
4	10. 20. 15	6. 59	0. 23. 19	2. 30	6. 41	22. 46
7	11. 1. 46	6. 44	0. 28. 16	2. 14	8. 47	22. 54
10	11. 14. 19	6. 9	1. 3. 39	1. 53	10. 59	23. 2
13	11. 28. 4	5. 12	1. 9. 20	1. 28	13. 13	23. 13
16	0. 13. 8	3. 48	1. 15. 18	1. 0	15. 29	23. 24
19	0. 29. 33	1. 59 S	1. 21. 32	0. 29 S	17. 42	23. 37
22	1. 17. 13	0. 9 N	1. 27. 59	0. 2 N	19. 46	23. 51
25	2. 5. 47	2. 23	2. 4. 32	0. 34	21. 38	0. 1
28	2. 24. 44	4. 24	2. 11. 7	1. 2	23. 10	0. 17
31	3. 13. 22	5. 55	2. 17. 36	1. 26	24. 20	0. 33
V E N U S.						
1	9. 23. 37	2. 7 S	11. 29. 44	1. 28 S	1. 27 S	21. 27
7	10. 3. 5	2. 32	0. 6. 40	1. 41	1. 6 N	21. 30
13	10. 12. 34	2. 52	0. 13. 37	1. 50	3. 41	21. 32
19	10. 22. 4	3. 8	0. 20. 37	1. 56	6. 16	21. 35
25	11. 1. 34	3. 18	0. 27. 38	1. 58	8. 49	21. 37
M A R S.						
1	2. 9. 43	0. 41 N	1. 28. 23	0. 25 N	20. 14 N	1. 10
7	2. 12. 48	0. 46	2. 2. 33	0. 29	21. 10	1. 4
13	2. 15. 52	0. 52	2. 6. 42	0. 32	21. 59	0. 58
19	2. 18. 54	0. 57	2. 10. 49	0. 35	22. 40	0. 52
25	2. 21. 54	1. 2	2. 14. 54	0. 38	23. 14	0. 45
J U P I T E R.						
1	9. 25. 13	0. 22 S	10. 6. 33	0. 23 S	19. 7 S	17. 59
7	9. 25. 44	0. 23	10. 6. 56	0. 24	18. 57	17. 38
13	9. 26. 14	0. 23	10. 7. 14	0. 25	18. 54	17. 16
19	9. 26. 45	0. 24	10. 7. 25	0. 26	18. 52	16. 53
25	9. 27. 16	0. 25	10. 7. 29	0. 28	18. 52	16. 29
S A T U R N. δ 23 ^d . 20 ^h $\frac{1}{2}$.						
1	2. 2. 12	1. 55 S	2. 0. 7	1. 44 S	18. 31 N	1. 19
7	2. 2. 26	1. 54	2. 0. 53	1. 43	18. 40	0. 59
13	2. 2. 39	1. 54	2. 1. 39	1. 43	18. 50	0. 39
19	2. 2. 52	1. 54	2. 2. 25	1. 42	19. 0	0. 18
25	2. 3. 6	1. 53	2. 3. 12	1. 42	19. 9	23. 54

Days of the Month.	Days of the Week.	THE MOON'S							
		Longitude.				Latitude.			
		Noon.	Midnight.			Noon.	Midnight.		
		S. D. M. S.	S. D. M. S.			D. M. S.	D. M. S.		
1	F.	6. 12. 30. 36	6. 18. 27. 29			4. 40. 45 N	4. 50. 11 N		
2	Sa.	6. 24. 23. 55	7. 0. 20. 8			4. 56. 27	4. 59. 28		
3	Sun.	7. 6. 16. 21	7. 12. 12. 42			4. 59. 15	4. 55. 46		
4	M.	7. 18. 9. 23	7. 24. 6. 34			4. 49. 3	4. 39. 11		
5	Tu.	8. 0. 4. 24	8. 6. 3. 7			4. 26. 12	4. 10. 14		
6	W.	8. 12. 2. 54	8. 18. 3. 59			3. 51. 26	3. 29. 57		
7	Th.	8. 24. 6. 40	9. 0. 11. 13			3. 5. 59	2. 39. 45		
8	F.	9. 6. 18. 3	9. 12. 27. 30			2. 11. 27	1. 41. 23		
9	Sa.	9. 18. 40. 3	9. 24. 56. 6			1. 9. 49	0. 37. 7 N		
10	Sun.	10. 1. 16. 11	10. 7. 40. 48			0. 3. 32 N	0. 30. 28 S		
11	M.	10. 14. 10. 27	10. 20. 45. 33			1. 4. 34 S	1. 38. 16		
12	Tu.	10. 27. 26. 36	11. 4. 13. 54			2. 11. 9	2. 42. 41		
13	W.	11. 11. 7. 49	11. 18. 8. 26			3. 12. 21	3. 39. 35		
14	Th.	11. 25. 15. 45	0. 2. 29. 37			4. 3. 52	4. 24. 37		
15	F.	0. 9. 49. 36	0. 17. 15. 8			4. 41. 21	4. 53. 32		
16	Sa.	0. 24. 45. 23	1. 2. 19. 20			5. 0. 51	5. 2. 58		
17	Sun.	1. 9. 55. 46	1. 17. 33. 23			4. 59. 46	4. 51. 14		
18	M.	1. 25. 10. 45	2. 2. 46. 28			4. 37. 30	4. 18. 54		
19	Tu.	2. 10. 19. 12	2. 17. 47. 46			3. 55. 52	3. 28. 56		
20	W.	2. 25. 11. 8	3. 2. 28. 25			2. 58. 46	2. 26. 1		
21	Th.	3. 9. 39. 1	3. 16. 42. 34			1. 51. 22	1. 15. 31		
22	F.	3. 23. 38. 55	4. 0. 28. 3			0. 39. 6 S	0. 2. 43 S		
23	Sa.	4. 7. 10. 9	4. 13. 45. 33			0. 33. 7 N	1. 7. 55 N		
24	Sun.	4. 20. 14. 41	4. 26. 38. 0			1. 41. 18	2. 12. 55		
25	M.	5. 2. 56. 6	5. 9. 9. 29			2. 42. 28	3. 9. 42		
26	Tu.	5. 15. 18. 50	5. 21. 24. 41			3. 34. 25	3. 56. 25		
27	W.	5. 27. 27. 37	6. 3. 28. 12			4. 15. 35	4. 31. 49		
28	Th.	6. 9. 26. 56	6. 15. 24. 20			4. 44. 56	4. 54. 56		
29	F.	6. 21. 20. 48	6. 27. 16. 49			5. 1. 43	5. 5. 14		
30	Sa.	7. 3. 12. 42	7. 9. 8. 48			5. 5. 27	5. 2. 23		
31	Sun.	7. 15. 5. 25	7. 21. 2. 50			4. 56. 2	4. 46. 26		

Days of the Month.		Days of the Week.		THE MOON'S					
				Age Days	Passage	Right Ascension.		Declination.	
					Merid.	Noon.	Midnight.	Noon.	Midnight.
					H. M.	D. M.	D. M.	D. M.	D. M.
1	F.	14		14	10. 38	193. 20	198. 52	0. 38 S	2. 46 S
2	Sa.	15		15	11. 19	204. 24	209. 59	4. 52	6. 56
3	Sun.	16		16	12. 1	215. 37	221. 18	8. 55	10. 49
4	M.	17		17	12. 45	227. 4	232. 55	12. 37	14. 18
5	Tu.	18		18	13. 31	238. 52	244. 55	15. 51	17. 14
6	W.	19		19	14. 18	251. 5	257. 21	18. 26	19. 26
7	Th.	20		20	15. 8	263. 44	270. 12	20. 14	20. 48
8	F.	21		21	15. 59	276. 45	283. 22	21. 7	21. 12
9	Sa.	22		22	16. 50	290. 3	296. 46	21. 1	20. 34
10	Sun.	23		23	17. 42	303. 30	310. 14	19. 51	18. 52
11	M.	24		24	18. 33	316. 58	323. 42	17. 38	16. 9
12	Tu.	25		25	19. 25	330. 25	337. 8	14. 26	12. 30
13	W.	26		26	20. 17	343. 50	350. 32	10. 22	8. 4
14	Th.	27		27	21. 9	357. 16	4. 3	5. 37	3. 3 S
15	F.	28		28	22. 2	10. 52	17. 46	0. 25 S	2. 15 N
16	Sa.	29		29	22. 58	24. 46	31. 53	4. 56 N	7. 33
17	Sun.	30		30	23. 56	39. 7	46. 29	10. 4	12. 26
18	M.	1		1	0	53. 59	61. 36	14. 35	16. 30
19	Tu.	2		2	0. 55	69. 18	77. 4	18. 8	19. 26
20	W.	3		3	1. 56	84. 52	92. 39	20. 24	21. 0
21	Th.	4		4	2. 56	100. 21	107. 57	21. 15	21. 10
22	F.	5		5	3. 54	115. 24	122. 40	20. 45	20. 1
23	Sa.	6		6	4. 48	129. 43	136. 34	19. 2	17. 48
24	Sun.	7		7	5. 39	143. 13	149. 39	16. 21	14. 44
25	M.	8		8	6. 27	155. 53	161. 58	12. 58	11. 4
26	Tu.	9		9	7. 12	167. 53	173. 41	9. 5	7. 2
27	W.	10		10	7. 54	179. 22	184. 59	4. 55	2. 46 N
28	Th.	11		11	8. 36	190. 33	196. 5	0. 37 N	1. 32 S
29	F.	12		12	9. 17	201. 37	207. 9	3. 40 S	5. 46
30	Sa.	13		13	9. 59	212. 44	218. 23	7. 48	9. 46
31	Sun.	14		14	10. 42	224. 6	229. 54	11. 39	13. 26

Days of the Month.	Days of the Week.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midnight.
		M. S.	M. S.	M. S.	M. S.		
1	F.	14. 47	14. 45	54. 14	54. 9	5210	5217
2	Sa.	14. 44	14. 44	54. 5	54. 4	5222	5223
3	Sun.	14. 44	14. 45	54. 5	54. 6	5222	5221
4	M.	14. 45	14. 46	54. 8	54. 11	5218	5214
5	Tu.	14. 47	14. 49	54. 16	54. 23	5207	5198
6	W.	14. 51	14. 54	54. 31	54. 40	5187	5175
7	Th.	14. 57	15. 0	54. 51	55. 3	5161	5145
8	F.	15. 4	15. 8	55. 17	55. 33	5127	5106
9	Sa.	15. 13	15. 18	55. 50	56. 9	5084	5059
10	Sun.	15. 24	15. 30	56. 30	56. 52	5032	5004
11	M.	15. 36	15. 43	57. 15	57. 39	4975	4945
12	Tu.	15. 49	15. 56	58. 4	58. 30	4913	4881
13	W.	16. 3	16. 10	58. 55	59. 20	4850	4820
14	Th.	16. 17	16. 23	59. 45	60. 8	4789	4761
15	F.	16. 29	16. 34	60. 30	60. 49	4735	4712
16	Sa.	16. 38	16. 41	61. 4	61. 15	4694	4682
17	Sun.	16. 43	16. 44	61. 21	61. 23	4675	4672
18	M.	16. 43	16. 41	61. 20	61. 12	4676	4685
19	Tu.	16. 37	16. 33	61. 0	60. 44	4699	4718
20	W.	16. 28	16. 21	60. 24	60. 0	4742	4771
21	Th.	16. 14	16. 6	59. 34	59. 7	4802	4835
22	F.	15. 59	15. 51	58. 39	58. 10	4870	4906
23	Sa.	15. 43	15. 35	57. 41	57. 13	4912	4977
24	Sun.	15. 28	15. 22	56. 47	56. 22	5010	5042
25	M.	15. 15	15. 9	55. 59	55. 37	5072	5100
26	Tu.	15. 4	15. 0	55. 18	55. 2	5125	5146
27	W.	14. 56	14. 53	54. 48	54. 36	5165	5181
28	Th.	14. 50	14. 48	54. 26	54. 18	5194	5205
29	F.	14. 46	14. 46	54. 13	54. 10	5211	5215
30	Sa.	14. 45	14. 45	54. 9	54. 9	5217	5217
31	Sun.	14. 46	14. 47	54. 11	54. 15	5214	5209

DISTANCES of MOON's Center from SUN, and from STARS EAST of her.

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XX ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Antares.	55. 6. 52	53. 39. 25	52. 12. 4	50. 44. 49	49. 17. 40	47. 50. 38	46. 23. 44	44. 56. 57
2		43. 30. 18	42. 3. 46	40. 37. 23	39. 11. 10	37. 45. 7	36. 19. 12	34. 53. 31	33. 28. 4
3		32. 2. 52	30. 37. 58	29. 13. 24	27. 49. 11	26. 25. 20			
3	α Aquilæ.	70. 51. 22	69. 24. 59	68. 18. 49	67. 2. 51	75. 58. 22	74. 41. 26	73. 24. 37	72. 7. 54
4		60. 46. 54	59. 32. 37	58. 18. 45	57. 5. 16	65. 47. 6	64. 31. 36	63. 16. 24	62. 1. 30
5		51. 5. 12				55. 52. 14	54. 39. 40	53. 27. 37	52. 16. 7
6		96. 46. 51	95. 24. 6	94. 1. 12	92. 38. 12	91. 15. 4	89. 51. 49	88. 28. 28	87. 5. 0
7	α Pegasi.	85. 41. 26	84. 17. 46	82. 54. 2	81. 30. 12	80. 6. 17	78. 42. 17	77. 18. 13	75. 54. 5
8		74. 29. 54	73. 5. 40	71. 41. 24	70. 17. 6	68. 52. 46	67. 28. 25	66. 4. 4	64. 39. 45
9		63. 15. 27	61. 51. 10	60. 26. 59	59. 2. 54	57. 38. 54	56. 15. 0	54. 51. 19	53. 27. 50
10		52. 4. 34	50. 41. 36	49. 18. 56	47. 56. 37	46. 34. 41			
9	The Sun.	120. 5. 12	118. 38. 52	117. 12. 18	115. 45. 29	114. 18. 24	112. 51. 4	111. 23. 27	109. 55. 33
10		108. 27. 22	106. 58. 54	105. 30. 7	104. 1. 2	102. 31. 39	101. 1. 57	99. 31. 55	98. 1. 34
11		96. 30. 54	94. 59. 53	93. 28. 32	91. 56. 50	90. 24. 47	88. 52. 22	87. 19. 35	85. 46. 26

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
12	The Sun.	84. 12. 55	82. 39. 2	81. 4. 46	79. 30. 7	77. 55. 6	76. 19. 41	74. 43. 52	73. 7. 40
13		71. 31. 5	69. 54. 5	68. 16. 44	66. 38. 59	65. 0. 50	63. 22. 19	61. 43. 25	60. 4. 9
14		58. 24. 30	56. 44. 28	55. 4. 5	53. 23. 21	51. 42. 16	50. 0. 51	48. 19. 7	46. 37. 5
15		44. 54. 44	43. 12. 6	41. 29. 11	39. 46. 1	38. 2. 35			
19	Regulus.	61. 52. 4	60. 2. 4	58. 12. 27	56. 23. 12	69. 15. 30	67. 24. 9	65. 33. 7	63. 42. 25
20		47. 22. 59	45. 36. 13	43. 49. 52	42. 3. 58	54. 34. 20	52. 45. 53	50. 57. 49	49. 10. 12
21		33. 21. 11	31. 38. 0	29. 55. 17	28. 13. 2	40. 18. 30	38. 33. 29	36. 48. 56	35. 4. 50
22		19. 48. 51				26. 31. 15	24. 49. 56	23. 9. 6	21. 28. 44
23	Spica η g	73. 51. 4	72. 12. 3	70. 33. 28	68. 55. 18	67. 17. 34	65. 40. 15	64. 3. 22	62. 26. 52
24		60. 50. 48	59. 15. 9	57. 39. 52	56. 5. 0	54. 30. 31	52. 56. 25	51. 22. 41	49. 49. 19
25		48. 16. 21	46. 43. 45	45. 11. 31	43. 39. 39	42. 8. 9	40. 36. 59	39. 6. 11	37. 35. 47
26		36. 5. 44	34. 36. 2	33. 6. 45	31. 37. 53	30. 9. 27	28. 41. 28	27. 13. 58	25. 46. 57
27	Antares.	24. 20. 26							
27		69. 56. 3	68. 27. 2	66. 58. 12	65. 29. 31	64. 1. 1	62. 32. 40	61. 4. 29	59. 36. 26
28		58. 8. 33	56. 40. 47	55. 13. 10	53. 45. 40	52. 18. 19	50. 51. 5	49. 24. 0	47. 57. 1
29		46. 30. 11	45. 3. 27	43. 36. 51	42. 10. 24	40. 44. 5	39. 17. 56	37. 51. 56	36. 26. 6
30	α Aquila.	35. 0. 27							
30		83. 44. 35	82. 27. 16	81. 10. 0	79. 52. 48	78. 35. 39	77. 18. 35	76. 1. 37	74. 44. 46
31		73. 28. 0	72. 11. 22	70. 54. 53	69. 38. 34	68. 22. 24	67. 6. 26	65. 50. 41	64. 35. 9
I. I		63. 19. 50							

DISTANCES of MOON's Center from SUN, and from STARS WEST of her.

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Regulus.	45. 39. 43	47. 8. 40	48. 37. 34	50. 6. 26	51. 35. 15	53. 4. 2	54. 32. 47	56. 1. 32
2		57. 30. 14	58. 58. 55	60. 27. 36	61. 56. 17	63. 24. 57	64. 53. 37	66. 22. 18	67. 50. 59
3		69. 19. 40	70. 48. 22	72. 17. 4	73. 45. 48	75. 14. 33	76. 43. 19	78. 12. 8	79. 40. 58
4		81. 9. 51							
4	Spica μ	27. 59. 43	29. 25. 51	30. 52. 14	32. 18. 52	33. 45. 44	35. 12. 49	36. 40. 6	38. 7. 35
5		39. 35. 15	41. 3. 5	42. 31. 4	43. 59. 13	45. 27. 31	46. 55. 57	48. 24. 32	49. 53. 16
6		51. 22. 9	52. 51. 10	54. 20. 19	55. 49. 38	57. 19. 5	58. 48. 41	60. 18. 26	61. 48. 20
7		63. 18. 23	64. 48. 36	66. 18. 58	67. 49. 30	69. 20. 12			
7	Antares.	30. 7. 49	31. 36. 3	33. 4. 47	34. 34. 3	24. 20. 59	25. 46. 44	27. 13. 7	28. 40. 10
8		42. 6. 38	43. 38. 17	45. 10. 18	46. 42. 40	36. 3. 46	37. 33. 53	39. 4. 24	40. 35. 19
9		54. 29. 44	56. 4. 11	57. 38. 59	59. 14. 8	48. 15. 24	49. 48. 28	51. 21. 53	52. 55. 39
10		67. 15. 11	68. 52. 27	70. 30. 6	72. 8. 6	60. 49. 38	62. 29. 29	64. 1. 42	65. 38. 16
11		80. 23. 48	82. 4. 4	83. 44. 44	85. 25. 46	73. 46. 29	75. 25. 15	77. 4. 23	78. 43. 54
12		93. 56. 53	95. 40. 16	97. 24. 3	99. 8. 11	87. 7. 12	88. 49. 2	90. 31. 16	92. 13. 53
13		107. 54. 32				100. 52. 43	102. 37. 37	104. 22. 53	106. 8. 32
14									

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
14	α Aquilæ.	63. 27. 24	64. 58. 18	66. 29. 57	68. 2. 19	69. 35. 22	71. 9. 5	72. 43. 22	74. 18. 14
15		75. 53. 41	77. 29. 37	79. 6. 0	80. 42. 49	82. 20. 4	83. 57. 41	85. 35. 3	87. 13. 46
16		88. 52. 15	90. 30. 53	92. 19. 46	93. 48. 45	95. 27. 51			
21	The Sun.	39. 22. 10	41. 1. 5	42. 39. 35	44. 17. 44	45. 55. 29	47. 32. 50	49. 9. 46	50. 46. 17
22		52. 22. 24	53. 58. 4	55. 33. 19	57. 8. 9	58. 42. 33	60. 16. 31	61. 50. 3	63. 23. 11
23		64. 55. 54	66. 28. 12	68. 0. 5	69. 31. 35	71. 2. 40	72. 33. 21	74. 3. 39	75. 33. 34
24		77. 3. 6	78. 32. 16	80. 1. 4	81. 29. 31	82. 57. 37	84. 25. 22	85. 52. 48	87. 19. 55
25		88. 46. 42	90. 13. 10	91. 39. 20	93. 5. 13	94. 30. 49	95. 56. 9	97. 21. 13	98. 46. 2
26		100. 10. 36	101. 34. 55	102. 59. 1	104. 22. 54	105. 46. 34	107. 10. 2	108. 33. 19	109. 56. 25
27		111. 19. 20	112. 42. 5	114. 4. 40	115. 27. 7	116. 49. 25	118. 11. 35	119. 33. 38	120. 55. 34
28		122. 17. 23							
25	Pollux.	42. 34. 7	44. 6. 16	45. 38. 14	47. 9. 59	48. 41. 33	50. 12. 55	51. 44. 4	53. 15. 3
26		54. 45. 50	56. 16. 25	57. 46. 49	59. 17. 2	60. 47. 5	62. 16. 57	63. 46. 40	65. 16. 13
27		66. 45. 37							
27	Regulus.	30. 40. 52	32. 10. 54	33. 40. 48	35. 10. 33	36. 40. 11	38. 9. 41	39. 39. 5	41. 8. 22
28		42. 37. 33	44. 6. 39	45. 35. 40	47. 4. 37	48. 33. 20	50. 2. 17	51. 31. 2	52. 59. 44
29		54. 28. 23	55. 57. 1	57. 25. 37	58. 54. 13	60. 22. 47	61. 51. 20	63. 19. 54	64. 48. 28
30		66. 17. 2	67. 45. 37	69. 14. 14	70. 42. 53	72. 11. 34			
30	Spica μ					19. 28. 19	20. 51. 21	22. 15. 2	23. 39. 17
31		25. 4. 4	26. 29. 22	27. 55. 5	29. 21. 12	30. 47. 41	32. 14. 27	33. 41. 30	35. 8. 44
J. 1		36. 36. 9							

Configurations of the SATELLITES of JUPITER,
at 3 o'Clock in the Morning.

1	1.0	4.3.	2.	⊙			
2		4.	.3	.2	1.	⊙	
3		4.				⊙	.3.1. .2
4	.4			1.		⊙	.3 2.0
5		.4		.2		⊙	.1 3.
6		.4		.1		⊙	.2 3.
7			.4			⊙	1. 2.
8		3.	2.	.1		⊙	.4
9	1.0		.3	.2		⊙	.4
10	3.0					⊙	.1 .2 .4
11	2.0			1.		⊙	.3 .4
12			.2			⊙	.1 3. 4.
13			.1			⊙	.2 3. 4.
14			3.			⊙	1. 2. 4.
15		3.	2.	.1		⊙	.4
16	1.0 4.0	.3	.2			⊙	
17	1.0	4.	.3			⊙	.2
18		4.		1.		⊙	2. .3
19		4.	2.			⊙	.1 3.
20		4.		1.		⊙	3. 2.0
21		.4		3.		⊙	1. 2.
22		.4		.1		⊙	2.
23			3.0 4	.2		⊙	1.
24	1.0			.3.4		⊙	.2
25				1.		⊙	.2 .4 .3
26			2.			⊙	.1 3.0 4
27			1.	.2		⊙	.3 .4
28				3.		⊙	.1 2. .4
29			3.	.1		⊙	2. 4.
30			.3	.2		⊙	1. 4.
31				.3	.1	⊙	.2 4.

Days of the Month.	Days of the Week.	Sundays, Holidays, Terms, &c.	Phases of the MOON.	
			D. H. M.	
			Full Moon	2. 6. 1
			Last Quarter	9. 20. 50
			New Moon	16. 11. 8
			First Quarter	23. 17. 21
			Other Phenomena.	
			D. H. M.	
1	M.	On mor. of H. Trin. 1 ret.	3. 18. 4	☾ 1 ad μ ♄
2	Tu.	[Nicomede.	4. 16. 58	☾ 0 ♄
3	W.	Oxford Term begins.	19. 24	☾ π ♄
4	Th.	K. Geo. III. born 1738.	6. 16. 42	☾ 2 ♄
5	F.	Pr. Er. Aug. b. Boniface.	7. 13. 45½	Im. of ♄ ♄ * 2½ N. of ☾'s
6	Sa.	[Tr. T. beg.	14. 59½	Em. * 4½ N. [Cent.
7	Sun.	1st Sunday after Trinity.	17. 36	☾ ♄ ♄
8	M.	In 8 days of H. Tr. 2 ret.	8. 3. 4	☾ 1 ☾
9	Tu.		9. 10. 29	☾ 1 ad ↓ ☾
10	W.	Prs. Amelia born.	11. 16	☾ 2 ad ↓ ☾
11	Th.	St. Barnabas.	11. 23	☾ 3 ad ↓ ☾
12	F.		12. - - -	♄ ε 8 diff. Lat. 55'.
13	Sa.		13. 0. 45	☾ 2 ad ♄ Ceti.
14	Sun.	2d Sunday after Trinity.	7. 59	☾ μ Ceti.
15	M.	In 15 days of H. T. 3 ret.	19. 7. 2	☾ ♄ ☾
16	Tu.		21. 0. 45	☾ enters ☾
17	W.	St. Alban,	23. 13. 17	☾ c ☾
18	Th.		27. - - -	♀ ♄ diff. Lat. 22'.
19	F.		21. 16	☾ γ ☾
20	Sa.	Transl. of Ed. K. of W.S.	28. 1. 47	☾ " ☾
21	Sun.	3d Sunday after Trinity.	6. 47	☾ θ ☾
22	M.	In 3 weeks of H. Trin.		
23	Tu.	[4 ret.		
24	W.	St. John Bapt. Tr. T. ends.		
25	Th.			
26	F.			
27	Sa.			
28	Sun.	4th Sunday after Trinity.		
29	M.	St. Peter,		
30	Tu.			

Days of the Month.	Days of the Week.	THE SUN'S			Equation of Time.	Diff.
		Longitude.	Rt. Ascens.	Declin.		
			<i>in Time.</i>	<i>North.</i>	<i>Sub.</i>	
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	M.	2. 10. 51. 51	4 37. 7,3	22. 5. 49	2. 36,0	9,0
2	Tu.	2. 11. 47. 15	4. 41. 12,9	22. 13. 42	2. 27,0	9,4
3	W.	2. 12. 46. 38	4. 45. 18,8	22. 21. 13	2. 17,6	9,8
4	Th.	2. 13. 44. 1	4. 49. 25,1	22. 28. 20	2. 7,8	10,1
5	F.	2. 14. 41. 22	4. 53. 31,8	22. 35. 3	1. 57,7	10,4
6	Sa.	2. 15. 38. 43	4. 57. 38,8	22. 41. 24	1. 47,3	10,8
7	Sun.	2. 16. 36. 4	5. 1. 46,2	22. 47. 20	1. 36,5	11,1
8	M.	2. 17. 33. 24	5. 5. 53,9	22. 52. 53	1. 25,4	11,4
9	Tu.	2. 18. 30. 44	5. 10. 1,9	22. 58. 1	1. 14,0	11,7
10	W.	2. 19. 28. 4	5. 14. 10,2	23. 2. 45	1. 2,3	11,9
11	Th.	2. 20. 25. 23	5. 18. 18,7	23. 7. 5	0. 50,4	12,2
12	F.	2. 21. 22. 42	5. 22. 27,4	23. 11. 0	0. 38,2	12,3
13	Sa.	2. 22. 20. 0	5. 26. 36,4	23. 14. 31	0. 25,9	12,6
14	Sun.	2. 23. 17. 18	5. 30. 45,5	23. 17. 38	0. 13,3	12,7
15	M.	2. 24. 14. 36	5. 34. 54,8	23. 20. 20	0. 0,6	12,8
16	Tu.	2. 25. 11. 54	5. 39. 4,3	23. 22. 37	Add. 12,2	13,0
17	W.	2. 26. 9. 11	5. 43. 13,8	23. 24. 29	0. 25,2	13,0
18	Th.	2. 27. 6. 27	5. 47. 23,4	23. 25. 57	0. 38,2	13,0
19	F.	2. 28. 3. 44	5. 51. 33,0	23. 27. 0	0. 51,2	13,1
20	Sa.	2. 29. 0. 59	5. 55. 42,7	23. 27. 38	1. 4,3	13,0
21	Sun.	2. 29. 58. 14	5. 59. 52,3	23. 27. 51	1. 17,3	13,0
22	M.	3. 0. 55. 28	6. 4. 1,9	23. 27. 40	1. 30,3	12,9
23	Tu.	3. 1. 52. 42	6. 8. 11,4	23. 27. 3	1. 43,2	12,9
24	W.	3. 2. 49. 55	6. 12. 20,8	23. 26. 1	1. 56,1	12,7
25	Th.	3. 3. 47. 8	6. 16. 30,2	23. 24. 36	2. 8,8	12,6
26	F.	3. 4. 44. 20	6. 20. 39,3	23. 22. 45	2. 21,4	12,4
27	Sa.	3. 5. 41. 32	6. 24. 48,3	23. 20. 29	2. 33,8	12,2
28	Sun.	3. 6. 38. 43	6. 28. 57,1	23. 17. 50	2. 46,0	12,1
29	M.	3. 7. 35. 53	6. 33. 5,7	23. 14. 46	2. 58,1	11,8
30	Tu.	3. 8. 33. 4	6. 37. 14,1	23. 11. 17	3. 9,9	

Days.	Time of ☉'s Semidiam. pass. Merid.	THE SUN'S			Place of the D's Node.
		Semi- diameter.	Hourly Motion.	Logarith. Distance.	
	M. S.	M. S.	M. S.		S. D. M.
1	1. 8,3	15. 48,9	2. 23,6	0.006309	4. 1. 55
7	1. 8,6	15. 48,2	2. 23,4	0.006638	4. 1. 36
13	1. 8,7	15. 47,6	2. 23,2	0.006909	4. 1. 17
19	1. 8,8	15. 47,2	2. 23,1	0.007096	4. 0. 58
25	1. 8,8	15. 47,0	2. 23,0	0.007188	4. 0. 39

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	7. 4. 52	4	10. 46. 25	3	9. 45. 25 Im.
4	1. 33. 1	8	0. 3. 35	* 3	13. 15. 29 E.
5	20. 1. 6	* 11	13. 20. 40	* 10	13. 43. 15 Im.
* 7	14. 29. 11	15	2. 37. 44	10	17. 13. 43 E.
9	8. 57. 18	18	15. 54. 43	17	17. 41. 1 Im.
11	3. 25. 23	22	5. 11. 36	17	21. 11. 48 E.
12	21. 53. 27	25	18. 28. 28	24	21. 38. 58 Im.
14	16. 21. 33	29	7. 45. 23	25	1. 10. 4 E.
16	10. 49. 40				
18	5. 17. 44				
19	23. 45. 49				
21	18. 13. 57				
* 23	12. 42. 2				
25	7. 10. 11				
27	1. 38. 22				
28	20. 6. 33				
* 30	14. 34. 43				
IV. Satellite.					
				* 17	11. 51. 42 Im.
				17	16. 12. 20 E.

THE PLANETS						
Days	Heliocentric		Geocentric		Declin.	Passage Merid.
	Long.	Lat.	Long.	Lat.		
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
MERCURY. Gr. Elong. 28 ^a .						
1	3. 19. 25	6. 16 N	2. 19. 43	1. 33 N	24. 37 N	0. 38
4	4. 6. 47	6. 55	2. 25. 54	1. 50	25. 14	0. 53
7	4. 22. 47	6. 57	3. 1. 46	2. 0	25. 27	1. 6
10	5. 7. 21	6. 31	3. 7. 18	2. 3	25. 19	1. 18
13	5. 20. 33	5. 46	3. 12. 27	1. 59	24. 52	1. 28
16	6. 2. 35	4. 49	3. 17. 15	1. 50	24. 10	1. 37
19	6. 13. 36	3. 45	3. 21. 39	1. 34	23. 16	1. 43
22	6. 23. 49	2. 39	3. 25. 40	1. 12	22. 13	1. 47
25	7. 3. 23	1. 32	3. 29. 16	0. 45	21. 4	1. 50
28	7. 12. 27	0. 26 N	4. 2. 25	0. 14 N	19. 52	1. 50
30	7. 18. 17	0. 17 S	4. 4. 15	0. 10 S	19. 4	1. 49
VENUS.						
1	11. 12. 39	3. 23 S	1. 5. 52	1. 57 S	11. 40 N	21. 40
7	11. 22. 11	3. 22	1. 12. 58	1. 52	13. 58	21. 43
13	0. 1. 43	3. 15	1. 20. 5	1. 45	16. 6	21. 46
19	0. 11. 16	3. 2	1. 27. 14	1. 35	18. 1	21. 50
25	0. 20. 50	2. 45	2. 4. 24	1. 24	19. 40	21. 55
MARS.						
1	2. 25. 22	1. 7 N	2. 19. 41	0. 41 N	23. 45 N	0. 38
7	2. 28. 19	1. 12	2. 23. 44	0. 44	24. 3	0. 31
13	3. 1. 14	1. 16	2. 27. 46	0. 46	24. 13	0. 24
19	3. 4. 8	1. 20	3. 1. 46	0. 49	24. 16	0. 16
25	3. 6. 59	1. 24	3. 5. 44	0. 51	24. 12	0. 9
JUPITER.						
1	9. 27. 52	0. 25 S	10. 7. 24	0. 29 S	18. 55 S	16. 0
7	9. 28. 23	0. 26	10. 7. 13	0. 30	18. 59	15. 34
13	9. 28. 54	0. 27	10. 6. 55	0. 32	19. 5	15. 8
19	9. 29. 25	0. 27	10. 6. 31	0. 33	19. 12	14. 42
25	9. 29. 56	0. 28	10. 6. 1	0. 34	19. 21	14. 15
SATURN.						
1	2. 3. 21	1. 53 S	2. 4. 6	1. 42 S	19. 20 N	23. 29
7	2. 3. 34	1. 52	2. 4. 53	1. 41	19. 29	23. 8
13	2. 3. 48	1. 52	2. 5. 39	1. 41	19. 37	22. 46
19	2. 4. 1	1. 52	2. 6. 23	1. 41	19. 44	22. 24
25	2. 4. 15	1. 51	2. 7. 7	1. 41	19. 52	22. 3

Days of the Month.	Days of the Week.	THE MOON'S							
		Longitude.				Latitude.			
		Noon.				Midnight.			
		S.	D.	M.	S.	S.	D.	M.	S.
1	M.	7. 27.	1. 14			8. 3. 0. 51			
2	Tu.	8. 9. 1. 52				8. 15. 4. 26			
3	W.	8. 21. 8. 45				8. 27. 14. 56			
4	Th.	9. 3. 23. 13				9. 9. 33. 42			
5	F.	9. 15. 46. 39				9. 22. 2. 16			
6	Sa.	9. 28. 20. 50				10. 4. 42. 36			
7	Sun.	10. 11. 7. 52				10. 17. 36. 56			
8	M.	10. 24. 10. 8				11. 0. 47. 43			
9	Tu.	11. 7. 30. 1				11. 14. 17. 15			
10	W.	11. 21. 9. 33				11. 28. 7. 5			
11	Th.	0. 5. 9. 47				0. 12. 17. 35			
12	F.	0. 19. 30. 14				0. 26. 47. 18			
13	Sa.	1. 4. 8. 16				1. 11. 32. 24			
14	Sun.	1. 18. 58. 53				1. 26. 26. 42			
15	M.	2. 3. 54. 52				2. 11. 22. 15			
16	Tu.	2. 18. 47. 45				2. 26. 10. 21			
17	W.	3. 3. 29. 3				3. 10. 43. 4			
18	Th.	3. 17. 51. 42				3. 24. 54. 25			
19	F.	4. 1. 50. 52				4. 8. 40. 53			
20	Sa.	4. 15. 24. 28				4. 22. 1. 44			
21	Sun.	4. 28. 32. 53				5. 4. 58. 17			
22	M.	5. 11. 18. 22				5. 17. 33. 36			
23	Tu.	5. 23. 44. 29				5. 29. 51. 38			
24	W.	6. 5. 55. 32				6. 11. 56. 50			
25	Th.	6. 17. 56. 2				6. 23. 53. 45			
26	F.	6. 29. 50. 29				7. 5. 46. 48			
27	Sa.	7. 11. 43. 7				7. 17. 39. 58			
28	Sun.	7. 23. 37. 43				7. 29. 36. 46			
29	M.	8. 5. 37. 29				8. 11. 40. 6			
30	Tu.	8. 17. 44. 59				8. 23. 52. 16			

		THE MOON'S					
Days of the Month.	Days of the Week.	Age	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight.	Noon.	Midnight.
		Days	H. M.	D. M.	D. M.	D. M.	D. M.
1	M.	15	11. 27	235. 48	241. 50	15. 4 S	16. 33 S
2	Tu.	16	12. 14	247. 58	254. 13	17. 53	19. 1
3	W.	17	13. 3	260. 35	267. 4	19. 57	20. 39
4	Th.	18	13. 53	273. 38	280. 16	21. 7	21. 20
5	F.	19	14. 45	286. 58	293. 41	21. 17	20. 58
6	Sa.	20	15. 36	300. 26	307. 10	20. 22	19. 31
7	Sun.	21	16. 27	313. 53	320. 34	18. 25	17. 4
8	M.	22	17. 18	327. 13	333. 49	15. 29	13. 41
9	Tu.	23	18. 8	340. 24	346. 57	11. 42	9. 32
10	W.	24	18. 58	353. 29	0. 2	7. 13	4. 47 S
11	Th.	25	19. 49	6. 36	13. 14	2. 16 S	0. 19 N
12	F.	26	20. 41	19. 56	26. 43	2. 55 N	5. 31
13	Sa.	27	21. 36	33. 38	40. 41	8. 3	10. 29
14	Sun.	28	22. 33	47. 53	55. 15	12. 46	14. 53
15	M.	29	23. 32	62. 45	70. 23	16. 45	18. 20
16	Tu.	1	♄	78. 7	85. 55	19. 37	20. 33
17	W.	2	0. 33	93. 44	101. 31	21. 8	21. 22
18	Th.	3	1. 33	109. 12	116. 46	21. 14	20. 46
19	F.	4	2. 30	124. 9	131. 21	19. 59	18. 55
20	Sa.	5	3. 25	138. 19	145. 4	17. 36	16. 5
21	Sun.	6	4. 15	151. 37	157. 57	14. 23	12. 32
22	M.	7	5. 1	164. 6	170. 6	10. 34	8. 30
23	Tu.	8	5. 46	175. 57	181. 41	6. 23	4. 14 N
24	W.	9	6. 28	187. 20	192. 56	2. 3 N	0. 8 S
25	Th.	10	7. 9	198. 29	204. 2	2. 18 S	4. 26
26	F.	11	7. 51	209. 36	215. 13	6. 32	8. 34
27	Sa.	12	8. 33	220. 53	226. 37	10. 30	12. 20
28	Sun.	13	9. 18	232. 28	238. 25	14. 4	15. 40
29	M.	14	10. 4	244. 29	250. 41	17. 6	18. 22
30	Tu.	15	10. 52	257. 1	263. 28	19. 26	20. 17

Days of the Month.	Days of the Week.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midnight.
		M. S.	M. S.	M. S.	M. S.		
1	M.	14. 48	14. 50	54. 20	54. 26	5202	5194
2	Tu.	14. 52	14. 54	54. 33	54. 42	5185	5173
3	W.	14. 57	15. 0	54. 52	55. 3	5159	5145
4	Th.	15. 3	15. 7	55. 15	55. 28	5129	5112
5	F.	15. 11	15. 15	55. 42	55. 57	5094	5075
6	Sa.	15. 19	15. 23	56. 12	56. 29	5055	5033
7	Sun.	15. 28	15. 33	56. 46	57. 4	5012	4989
8	M.	15. 38	15. 44	57. 23	57. 43	4965	4940
9	Tu.	15. 49	15. 55	58. 3	58. 23	4915	4890
10	W.	16. 0	16. 5	58. 43	59. 3	4865	4841
11	Th.	16. 11	16. 16	59. 23	59. 41	4816	4794
12	F.	16. 20	16. 25	59. 58	60. 14	4773	4754
13	Sa.	16. 28	16. 31	60. 27	60. 37	4739	4727
14	Sun.	16. 33	16. 34	60. 44	60. 48	4718	4714
15	M.	16. 34	16. 33	60. 47	60. 43	4715	4719
16	Tu.	16. 30	16. 27	60. 34	60. 22	4730	4745
17	W.	16. 23	16. 17	60. 6	59. 47	4764	4787
18	Th.	16. 11	16. 5	59. 25	59. 1	4813	4843
19	F.	15. 58	15. 51	58. 35	58. 9	4875	4907
20	Sa.	15. 43	15. 36	57. 42	57. 16	4941	4973
21	Sun.	15. 29	15. 23	56. 50	56. 26	5006	5037
22	M.	15. 16	15. 10	56. 2	55. 40	5068	5097
23	Tu.	15. 5	15. 1	55. 22	55. 6	5120	5141
24	W.	14. 57	14. 54	54. 52	54. 40	5159	5175
25	Th.	14. 51	14. 49	54. 30	54. 23	5189	5198
26	F.	14. 48	14. 47	54. 19	54. 16	5203	5207
27	Sa.	14. 47	14. 48	54. 16	54. 19	5207	5203
28	Sun.	14. 49	14. 51	54. 23	54. 29	5198	5190
29	M.	14. 53	14. 55	54. 37	54. 46	5179	5167
30	Tu.	14. 58	15. 2	54. 57	55. 9	5153	5137

DISTANCES of MOON's Center from SUN, and from STARS EAST of her.

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	α Aquilæ.	63. 19. 51	62. 4. 52	60. 50. 9	59. 35. 44	58. 21. 41	57. 8. 0	55. 54. 46	54. 42. 2
2		53. 29. 47	52. 18. 6	51. 7. 2	49. 56. 35	48. 46. 47			
2	α Pegasi.	88. 26. 52	87. 2. 54	85. 38. 50	84. 14. 40	94. 1. 29	92. 38. 1	91. 14. 26	89. 50. 43
3		77. 12. 35	75. 47. 59	74. 23. 21	72. 58. 42	82. 50. 24	81. 26. 3	80. 1. 37	78. 37. 8
4		65. 55. 27	64. 30. 53	63. 6. 25	61. 42. 3	71. 34. 2	70. 9. 21	68. 44. 41	67. 20. 3
5		54. 42. 29				60. 17. 47	58. 53. 41	57. 29. 45	56. 6. 0
6	α Arietis.	96. 19. 32	94. 47. 21	93. 14. 56	91. 42. 20	90. 9. 30	88. 36. 28	87. 3. 13	85. 29. 47
7		83. 56. 8	82. 22. 17	80. 48. 14	79. 13. 59	77. 39. 33	76. 4. 55	74. 30. 5	72. 55. 5
8		71. 19. 54	69. 44. 32	68. 9. 0	66. 33. 18	64. 57. 27	63. 21. 26	61. 45. 18	60. 9. 2
9		58. 32. 39	56. 56. 8	55. 19. 34	53. 42. 57	52. 6. 17	50. 29. 37	48. 52. 57	47. 16. 19
10		45. 39. 44							
7	The Sun.	113. 22. 14	111. 50. 23	110. 18. 15	108. 45. 52	119. 27. 4	117. 56. 14	116. 25. 9	114. 53. 49
8		100. 59. 42	99. 25. 36	97. 51. 13	96. 16. 33	107. 13. 12	105. 40. 15	104. 7. 1	102. 33. 30
9		88. 18. 46	86. 42. 18	85. 5. 32	83. 28. 27	94. 41. 35	93. 6. 20	91. 30. 46	89. 54. 55
10						81. 51. 5	80. 13. 25	78. 35. 28	76. 57. 12

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
11	The Sun.	75. 18. 39	73. 39. 47	72. 0. 37	70. 21. 10	68. 41. 26	67. 1. 25	65. 21. 7	63. 40. 33
12		61. 59. 43	60. 18. 36	58. 37. 15	56. 55. 39	55. 13. 48	53. 31. 42	51. 49. 24	50. 6. 53
13		48. 24. 10	46. 41. 15	44. 58. 10	43. 14. 56	41. 31. 32	39. 47. 59		
18	Regulus.	39. 8. 54	37. 22. 23	35. 36. 16	33. 50. 33	32. 5. 13	30. 20. 18	28. 35. 49	26. 51. 46
19		25. 8. 8	23. 24. 57	21. 42. 15	20. 0. 0	18. 18. 14			
19	Spica μ	65. 39. 37	64. 0. 20	62. 21. 29	60. 43. 3	72. 21. 3	70. 40. 3	68. 59. 29	67. 19. 20
20		52. 37. 27	51. 1. 37	49. 26. 13	47. 51. 14	59. 5. 4	57. 27. 31	55. 50. 24	54. 13. 42
21		40. 2. 44	38. 30. 19	36. 58. 20	35. 26. 50	46. 16. 41	44. 42. 33	43. 8. 51	41. 35. 34
22		27. 56. 32				33. 55. 47	32. 25. 13	30. 55. 9	29. 25. 36
23		73. 37. 12	72. 6. 22	70. 35. 47	69. 5. 29	67. 35. 25	66. 5. 36	64. 36. 1	63. 6. 40
24	Antares.	61. 37. 32	60. 8. 37	58. 39. 54	57. 11. 23	55. 43. 4	54. 14. 56	52. 47. 0	51. 19. 14
25		49. 51. 40	48. 24. 15	46. 57. 2	45. 29. 59	44. 3. 6	42. 36. 23	41. 9. 51	39. 43. 30
26		38. 17. 21	36. 51. 20	35. 25. 34	34. 0. 3	32. 34. 47	31. 9. 50	29. 45. 9	28. 20. 49
27		26. 56. 50							
27	α Aquilæ.	76. 19. 12	75. 2. 24	73. 45. 43	72. 29. 11	71. 12. 44	69. 56. 28	68. 40. 22	67. 24. 25
28		66. 8. 42	64. 53. 10	63. 37. 52	62. 22. 51	61. 8. 5	59. 53. 35	58. 39. 26	57. 25. 40
29		56. 12. 16	54. 59. 20	53. 46. 52	52. 34. 56	51. 23. 32			
29	α Pegasi.	91. 33. 43	90. 9. 38	88. 45. 24	87. 21. 2	97. 8. 14	95. 44. 52	94. 21. 20	92. 57. 37
30 J. 1		80. 17. 6				85. 56. 31	84. 31. 51	83. 7. 2	81. 42. 8

DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Spica μ	36. 36. 9	38. 3. 52	39. 31. 48	40. 59. 55	42. 28. 14	43. 56. 44	45. 25. 25	46. 54. 17
2		48. 23. 20	49. 52. 33	51. 21. 55	52. 51. 28	54. 21. 11	55. 51. 4	57. 21. 7	58. 51. 20
3		60. 21. 43	61. 52. 16	63. 22. 57	64. 53. 49	66. 24. 50			
3	Antares.					21. 36. 1	23. 0. 40	24. 26. 12	25. 52. 31
4		27. 19. 34	28. 47. 20	30. 15. 39	31. 44. 35	33. 14. 3	34. 43. 54	36. 14. 9	37. 44. 50
5		39. 15. 53	40. 47. 16	42. 18. 58	43. 51. 0	45. 23. 22	46. 56. 1	48. 28. 57	50. 2. 10
6		51. 35. 41	53. 9. 27	54. 43. 30	56. 17. 49	57. 52. 25	59. 27. 16	61. 2. 24	62. 37. 47
7		64. 13. 26	65. 49. 20	67. 25. 31	69. 1. 57	70. 38. 39	72. 15. 37	73. 52. 52	75. 30. 22
8		77. 8. 9	78. 46. 11	80. 24. 31	82. 3. 6	83. 41. 59	85. 21. 8	87. 0. 34	88. 40. 17
9		90. 20. 16	92. 0. 33	93. 41. 6	95. 21. 56	97. 3. 3	98. 44. 27	100. 26. 7	102. 8. 5
10		103. 50. 19	105. 32. 50	107. 15. 37	108. 58. 42	110. 42. 3			
10	α Aquilæ.					65. 58. 23	67. 27. 28	68. 57. 11	70. 27. 29
11		71. 58. 21	73. 29. 45	75. 1. 39	76. 34. 0	78. 6. 51	79. 40. 8	81. 13. 45	82. 47. 45
12		84. 22. 7	85. 56. 47	87. 31. 43	89. 6. 55	90. 42. 22			

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
12	Fomalhaut.	63. 8. 15	64. 51. 35	66. 35. 16	68. 19. 18	56. 19. 26	58. 0. 55	59. 42. 54	61. 25. 21
13		77. 3. 55	78. 49. 30	80. 35. 13	82. 21. 4	70. 3. 42	71. 48. 23	73. 33. 20	75. 18. 30
14		91. 11. 29				84. 7. 3	85. 53. 6	87. 39. 12	89. 25. 21
15									
19	The Sun.	46. 24. 30	47. 57. 23	49. 29. 54	51. 2. 0	40. 8. 58	41. 43. 27	43. 17. 31	44. 51. 13
20		58. 36. 43	60. 6. 31	61. 35. 57	63. 5. 1	52. 33. 44	54. 5. 3	55. 35. 59	57. 6. 33
21		70. 25. 10	71. 52. 12	73. 18. 56	74. 45. 21	64. 33. 44	66. 2. 6	67. 30. 7	68. 57. 49
22		81. 53. 8	83. 17. 54	84. 42. 26	86. 6. 44	76. 11. 28	77. 37. 17	79. 2. 50	80. 28. 7
23		93. 4. 59	94. 28. 4	95. 50. 59	97. 13. 45	87. 30. 48	88. 54. 39	90. 18. 17	91. 41. 44
24		104. 5. 27	105. 27. 27	106. 49. 22	108. 11. 13	98. 36. 21	99. 58. 48	101. 21. 8	102. 43. 21
25		114. 59. 27	116. 20. 59	117. 42. 30	119. 4. 0	109. 32. 58	110. 54. 39	112. 16. 18	113. 37. 54
26						120. 25. 31			
23	Regulus.	39. 7. 56	40. 38. 6	42. 8. 6	43. 37. 57	33. 5. 33	34. 36. 25	36. 7. 6	37. 37. 36
24		51. 5. 9	52. 34. 15	54. 3. 17	55. 32. 15	45. 7. 39	46. 37. 11	48. 6. 37	49. 35. 55
25		62. 56. 7	64. 24. 48	65. 53. 28	67. 22. 6	57. 1. 8	58. 29. 57	59. 58. 43	61. 27. 26
26		74. 45. 24				68. 50. 43	70. 19. 21	71. 48. 1	73. 16. 42
27									
27	Spica π	21. 54. 32	23. 18. 34	24. 43. 6	26. 8. 6	27. 33. 31	28. 59. 21	30. 25. 33	31. 52. 5
28		33. 18. 56	34. 46. 2	36. 13. 24	37. 41. 1	39. 8. 54	40. 37. 0	42. 5. 19	43. 33. 51
29		45. 2. 37	46. 31. 34	48. 0. 45	49. 30. 8	50. 59. 43	52. 29. 31	53. 59. 31	55. 29. 44
30		57. 0. 10	58. 30. 47	60. 1. 37	61. 32. 39	63. 3. 54	64. 35. 21	66. 7. 0	67. 38. 52
J. 1		69. 10. 57							

Configurations of the SATELLITES of JUPITER,
at 2 o'Clock in the Morning.

1	I●			⊙	³ 2 0 4	°
2			2.	4.	⊙ .1	.3
3		4.		.2 1.	⊙	3.
4		4.			⊙ 3.	.1 .2
5		4.	3.	1.	⊙	2●
6		4.	.3	.2	⊙	1.
7		4.	.3	.1	⊙	.2
8		4.			⊙ 1.	.3 2.
9	I.O		4.	2.	⊙	.3
10	4.O			.2 1.	⊙	3.
11	3●				⊙	.1 .3.4
12	2●		3.	1.	⊙	.4
13		3.	.2		⊙	1. .4
14		.3	.1		⊙	.2 .4
15					⊙ .3 1.	2. 4.
16			2.	.1	⊙	.3 4.
17			.2	1.	⊙	3 0 4
18					⊙ .1 4.3.	.2
19			3.4. 1.		⊙ 2.	
20		4.7.	2.		⊙	.1
21		4.	.3	.1	⊙	2.0
22		4.			⊙	1. 2. 3.0
23		4.		2. .1	⊙	.3
24	I● 4.		.2		⊙	3.
25		4.			⊙ .1	.3 3.
26			4. 3. 1.		⊙	2.
27		3.	2.		⊙	.4.1
28	2.0	.3	1.		⊙	.4
29	3.0				⊙	1. 2. .4
30			.1 2		⊙	.3 .4

Days of the Month.	Days of the Week.	Sundays, Holidays, Terms, &c.	Phases of the MOON.	
			D. H. M.	
			Full Moon	1. 19. 44
			Left Quarter	9. 2. 18
			New Moon	15. 19. 31
			First Quarter	23. 9. 45
			Full Moon	31. 7. 53
			Other Phenomena.	
			D. H. M.	
1	W.		1. 0. 37	☾ 1 ad μ ♄
2	Th.	Visitat. of B. V. Mary.	23. 17	☾ 0 ♄
3	F.		2. - - -	♄ ♄ ☽ diff. Lat. 40'
4	Sa.	Translat. of St. Martin.		☽ 18 diff. Lat. 7'
5	Sun.	5th Sunday after Trinity.	1. 41	☾ π ♄
6	M.		3. 18. 34	☾ 24
7	Tu.	Camb. Commencement.	4. 19. 54	☾ γ ♄
8	W.		23. 5	☾ δ ♄
9	Th.		5. 8. 31	☾ 1 ☽
10	F.	Camb. Term ends.	6. 15. 49	☾ 1 ad ↓ ☽
11	Sa.		16. 36	☾ 2 ad ↓ ☽
12	Sun.	6th Sunday after Trinity.	16. 44	☾ 3 ad ↓ ☽
13	M.	Oxford Aft.	10. 7. 35	☾ 2 ad ☽ Ceti.
14	Tu.		15. 3	☾ μ Ceti.
15	W.	Swithin.	12. - - -	☽ Stationary.
16	Th.		8. 26	☾ 1 ad δ ☽
17	F.		8. 52	☾ 2 ad δ ☽
18	Sa.	Oxford Term ends.	13. 16	☾ 28
19	Sun.	7th Sunday after Trinity.	15. - - -	☾ eclipsed, invisible.
20	M.	Margaret.	18. - - -	☽ μ π diff. Lat. 23'
21	Tu.		20. 21. 30	☾ c ☽
22	W.	Magdalen.	22. 11. 35	☾ enters ♄
23	Th.		25. 4. 55	☾ γ ☽
24	F.		9. 6	Im. of ☽ * 7' N. of ☾
25	Sa.	St. James.	10. 14. 12	Em. * 8 1/2' N. [Cent.
26	Sun.	8th Su. after Tr. St. Anne.	14. 26	☾ 0 ☽
27	M.		28. 8. 24	☾ 1 ad μ ♄
28	Tu.		29. - - -	☽ δ π diff. Lat. 14'
29	W.		6. 59	☾ 0 ♄
30	Th.		9. 23	☾ π ♄
31	F.		30. 19. 43	☾ 24
			31. - - -	☾ eclipsed, partly vis.

Days of the Month.	Days of the Week.	THE SUN'S			Equation of Time.	Diff.
		Longitude.	Rt. Ascens. in Time.	Declin. North.		
		S. D. M. S.	H. M. S.	D. M. S.	M. S. Add.	S.
1	W.	3. 9. 30. 14	6. 41. 22, 3	23. 7. 25	3. 21, 5	
2	Th.	3. 10. 27. 25	6. 45. 30, 2	23. 3. 7	3. 32, 8	11, 3
3	F.	3. 11. 24. 35	6. 49. 37, 8	22. 58. 25	3. 43, 8	11, 0
4	Sa.	3. 12. 21. 45	6. 53. 45, 2	22. 53. 20	3. 54, 6	10, 8
5	Sun.	3. 13. 18. 56	6. 57. 52, 2	22. 47. 51	4. 5, 0	10, 4
						10, 1
6	M.	3. 14. 16. 7	7. 1. 58, 9	22. 41. 58	4. 15, 1	
7	Tu.	3. 15. 13. 19	7. 6. 5, 3	22. 35. 41	4. 24, 9	9, 8
8	W.	3. 16. 10. 31	7. 10. 11, 4	22. 29. 1	4. 34, 4	9, 5
9	Th.	3. 17. 7. 44	7. 14. 17, 1	22. 21. 57	4. 43, 5	9, 1
10	F.	3. 18. 4. 57	7. 18. 22, 4	22. 14. 30	4. 52, 2	8, 7
						8, 3
11	Sa.	3. 19. 2. 11	7. 22. 27, 3	22. 6. 40	5. 0, 5	
12	Sun.	3. 19. 59. 25	7. 26. 31, 7	21. 58. 27	5. 8, 4	7, 9
13	M.	3. 20. 56. 40	7. 30. 35, 7	21. 49. 51	5. 15, 8	7, 4
14	Tu.	3. 21. 53. 56	7. 34. 39, 3	21. 40. 53	5. 22, 8	7, 0
15	W.	3. 22. 51. 12	7. 38. 42, 4	21. 31. 33	5. 29, 4	6, 6
						6, 0
16	Th.	3. 23. 48. 29	7. 42. 45, 0	21. 21. 51	5. 35, 4	
17	F.	3. 24. 45. 46	7. 46. 47, 1	21. 11. 47	5. 40, 9	5, 5
18	Sa.	3. 25. 43. 4	7. 50. 48, 6	21. 1. 21	5. 45, 9	5, 0
19	Sun.	3. 26. 40. 22	7. 54. 49, 6	20. 50. 34	5. 50, 4	4, 5
20	M.	3. 27. 37. 41	7. 58. 50, 1	20. 39. 26	5. 54, 3	3, 9
						3, 3
21	Tu.	3. 28. 35. 0	8. 2. 50, 0	20. 27. 57	5. 57, 6	
22	W.	3. 29. 32. 19	8. 6. 49, 3	20. 16. 8	6. 0, 4	2, 8
23	Th.	4. 0. 29. 38	8. 10. 48, 0	20. 3. 58	6. 2, 5	2, 1
24	F.	4. 1. 26. 58	8. 14. 46, 1	19. 51. 28	6. 4, 0	1, 5
25	Sa.	4. 2. 24. 18	8. 18. 43, 6	19. 38. 38	6. 4, 9	0, 9
						0, 4
26	Sun.	4. 3. 21. 39	8. 22. 40, 5	19. 25. 29	6. 5, 3	
27	M.	4. 4. 19. 0	8. 26. 36, 8	19. 12. 1	6. 5, 1	0, 2
28	Tu.	4. 5. 16. 21	8. 30. 32, 5	18. 58. 13	6. 4, 2	0, 9
29	W.	4. 6. 13. 43	8. 34. 27, 5	18. 44. 7	6. 2, 6	1, 6
30	Th.	4. 7. 11. 6	8. 38. 21, 9	18. 29. 43	6. 0, 5	2, 1
						2, 7
31	F.	4. 8. 8. 30	8. 42. 15, 7	18. 15. 0	5. 57, 8	

Days.	Time of ☉'s Semidiam. pass. Merid.	THE SUN'S			Place of the ☽'s Node
	M. S.	Semi- diameter.	Hourly Motion.	Logarith. Distance.	S. D. M.
1	1. 8,6	15.46,9	2.23,0	0.007208	4. 0. 19
7	1. 8,4	15.47,0	2.23,0	0.007182	4. 0. 0
13	1. 8,0	15.47,2	2.23,1	0.007090	3.29.41
19	1. 7,6	15.47,6	2.23,2	0.006906	3.29.22
25	1. 7,1	15.48,2	2.23,4	0.006634	3.29. 3

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	9. 2.58	2	21. 2.24	2	1.37. 9 Im.
4	3.31.11	* 6	10.19.24	2	5. 8.35 E.
5	21.59.26	9	23.36.29	9	5.35.40 Im.
7	16.27.42	*13	12.53.39	9	9. 7.24 E.
* 9	10.56. 2	17	2.10.55	*16	9.34.45 Im.
11	5.24.21	20	15.28.17	*16	13. 6.46 E.
12	23.52.43	24	4.45.45	*23	13.34.26 Im.
14	18.21. 8	<i>Emerfions.</i>		23	17. 6.43 E.
*16	12.49.35	27	20.52.37	30	17.34.46 Im.
18	7.18. 4	*31	10.10.23	30	21. 7.18 E.
20	1.46.34				
21	20.15. 9				
*23	14.43.45				
	<i>Emerfions.</i>				
*25	11.27.47				
27	5.56.28				
29	0.25.13				
30	18.54. 1				
				IV. Satellite.	
				4	5.53.57 Im.
				* 4	10.18. 3 E.
				20	23.58.29 Im.
				21	4.25.54 E.

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.		Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	
MERCURY. Inf δ 26 ^d . 3 ^h 1/2.							
1	7. 21. 9	0. 38 S	4. 5. 6	0. 22 S	18. 39 N	1. 48	
4	7. 29. 36	1. 40	4. 7. 15	1. 2	17. 29	1. 44	
7	8. 7. 53	2. 38	4. 8. 48	1. 44	16. 25	1. 37	
10	8. 16. 7	3. 32	4. 9. 44	2. 28	15. 28	1. 27	
13	8. 24. 24	4. 22	4. 9. 56	3. 11	14. 43	1. 15	
16	9. 2. 48	5. 7	4. 9. 26	3. 51	14. 12	1. 0	
19	9. 11. 25	5. 47	4. 8. 15	4. 25	13. 58	0. 43	
22	9. 20. 22	6. 19	4. 6. 28	4. 48	14. 2	0. 24	
25	9. 29. 46	6. 44	4. 4. 21	4. 57	14. 23	0. 3	
28	10. 9. 43	6. 58	4. 2. 11	4. 51	14. 58	23. 36	
31	10. 20. 23	6. 59	4. 0. 20	4. 29	15. 43	23. 18	
VENUS. δ 1 ^d . 17 ^h .							
1	1. 0. 25	2. 22 S	2. 11. 35	1. 11 S	21. 1 N	22. 0	
7	1. 10. 1	1. 56	2. 18. 47	0. 57	22. 3	22. 6	
13	1. 19. 38	1. 27	2. 26. 1	0. 42	22. 43	22. 13	
19	1. 29. 16	0. 55	3. 3. 17	0. 26	23. 0	22. 21	
25	2. 8. 56	0. 21	3. 10. 33	0. 10	22. 53	22. 29	
MARS. δ 1 ^d . 17 ^h .							
1	3. 9. 50	1. 27 N	3. 9. 43	0. 53 N	24. 0 N	0. 1	
7	3. 12. 40	1. 30	3. 13. 39	0. 55	23. 41	23. 53	
13	3. 15. 28	1. 33	3. 17. 35	0. 57	23. 16	23. 45	
19	3. 18. 15	1. 36	3. 21. 30	0. 59	22. 44	23. 38	
25	3. 21. 1	1. 39	3. 25. 24	1. 1	22. 5	23. 30	
JUPITER. δ 25 ^d . 3 ^h .							
1	10. 0. 26	0. 29 S	10. 5. 26	0. 35 S	19. 30 S	13. 48	
7	10. 0. 57	0. 30	10. 4. 47	0. 36	19. 41	13. 21	
13	10. 1. 28	0. 30	10. 4. 4	0. 37	19. 52	12. 53	
19	10. 1. 59	0. 31	10. 3. 19	0. 38	20. 3	12. 26	
25	10. 2. 30	0. 31	10. 2. 32	0. 39	20. 15	11. 59	
SATURN. δ 25 ^d . 3 ^h .							
1	2. 4. 28	1. 51 S	2. 7. 51	1. 41 S	19. 58 N	21. 41	
7	2. 4. 41	1. 50	2. 8. 32	1. 41	20. 5	21. 19	
13	2. 4. 55	1. 50	2. 9. 12	1. 42	20. 11	20. 57	
19	2. 5. 8	1. 50	2. 9. 50	1. 42	20. 16	20. 36	
25	2. 5. 21	1. 49	2. 10. 25	1. 42	20. 21	20. 15	

Days of the Month.	Days of the Week.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	W.	9. 0. 2. 11	9. 6. 14. 54	2. 33. 56N	2. 3. 17N
2	Th.	9. 12. 30. 32	9. 18. 49. 9	1. 30. 53	0. 57. 5N
3	F.	9. 25. 10. 54	10. 1. 35. 50	0. 22. 16N	0. 13. 8S
4	Sa.	10. 8. 4. 2	10. 14. 35. 31	0. 48. 42S	1. 23. 56
5	Sun.	10. 21. 10. 24	10. 27. 48. 38	1. 58. 22	2. 31. 30
6	M.	11. 4. 30. 20	11. 11. 15. 27	3. 2. 52	3. 31. 57
7	Tu.	11. 18. 4. 1	11. 24. 56. 2	3. 58. 18	4. 21. 27
8	W.	0. 1. 51. 23	0. 8. 50. 3	4. 41. 0	4. 56. 33
9	Th.	0. 15. 51. 52	0. 22. 56. 39	5. 7. 48	5. 14. 29
10	F.	1. 0. 4. 11	1. 7. 14. 8	5. 16. 22	5. 13. 22
11	Sa.	1. 14. 26. 7	1. 21. 39. 44	5. 5. 26	4. 52. 40
12	Sun.	1. 28. 54. 26	2. 6. 9. 38	4. 35. 11	4. 13. 18
13	M.	2. 13. 24. 44	2. 20. 39. 0	3. 47. 20	3. 17. 46
14	Tu.	2. 27. 51. 47	3. 5. 2. 25	2. 45. 8	2. 10. 1
15	W.	3. 12. 10. 11	3. 19. 14. 31	1. 33. 5	0. 54. 59S
16	Th.	3. 26. 14. 51	4. 3. 10. 46	0. 16. 24S	0. 22. 1N
17	F.	4. 10. 1. 51	4. 16. 47. 53	0. 59. 42N	1. 36. 3
18	Sa.	4. 23. 28. 41	5. 0. 4. 11	2. 10. 36	2. 42. 58
19	Sun.	5. 6. 34. 29	5. 12. 59. 42	3. 12. 44	3. 39. 41
20	M.	5. 19. 20. 3	5. 25. 35. 54	4. 3. 34	4. 24. 13
21	Tu.	6. 1. 47. 34	6. 7. 55. 30	4. 41. 33	4. 55. 28
22	W.	6. 14. 0. 12	6. 20. 2. 9	5. 5. 57	5. 12. 58
23	Th.	6. 26. 1. 54	7. 2. 0. 3	5. 16. 30	5. 16. 38
24	F.	7. 7. 57. 7	7. 13. 53. 41	5. 13. 21	5. 6. 43
25	Sa.	7. 19. 50. 22	7. 25. 47. 38	4. 56. 49	4. 43. 42
26	Sun.	8. 1. 46. 6	8. 7. 46. 13	4. 27. 28	4. 8. 15
27	M.	8. 13. 48. 31	8. 19. 53. 26	3. 46. 9	3. 21. 22
28	Tu.	8. 26. 1. 22	9. 2. 12. 38	2. 54. 3	2. 24. 27
29	W.	9. 8. 27. 34	9. 14. 46. 25	1. 52. 51	1. 19. 31
30	Th.	9. 21. 9. 19	9. 27. 36. 24	0. 44. 52N	0. 9. 16N
31	F.	10. 4. 7. 43	10. 10. 43. 16	0. 26. 50S	1. 2. 58S

		THE MOON'S					
Days of the Month.	Days of the Week.	Age	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight.	Noon.	Midnight.
		Days	H. M.	D. M.	D. M.	D. M.	D. M.
1	W.	16	11. 43	270. 2	276. 42	20. 54 S	21. 16 S
2	Th.	17	12. 35	283. 27	290. 15	21. 22	21. 12
3	F.	18	13. 27	297. 4	303. 54	20. 45	20. 2
4	Sa.	19	14. 19	310. 43	317. 29	19. 3	17. 49
5	Sun.	20	15. 10	324. 13	330. 54	16. 20	14. 37
6	M.	21	16. 0	337. 31	344. 5	12. 42	10. 37
7	Tu.	22	16. 50	350. 36	357. 5	8. 23	6. 1
8	W.	23	17. 40	3. 34	10. 4	3. 33 S	1. 2 S
9	Th.	24	18. 30	16. 35	23. 10	1. 31 N	4. 3 N
10	F.	25	19. 22	29. 50	36. 37	6. 34	9. 0
11	Sa.	26	20. 16	43. 30	50. 32	11. 19	13. 29
12	Sun.	27	21. 13	57. 43	65. 2	15. 27	17. 12
13	M.	28	22. 12	72. 30	80. 4	18. 40	19. 50
14	Tu.	29	23. 12	87. 43	95. 24	20. 42	21. 12
15	W.	1	0	103. 5	110. 42	21. 22	21. 10
16	Th.	2	0. 10	118. 12	125. 34	20. 39	19. 49
17	F.	3	1. 6	132. 46	139. 46	18. 43	17. 21
18	Sa.	4	1. 59	146. 33	153. 9	15. 45	14. 0
19	Sun.	5	2. 48	159. 32	165. 45	12. 6	10. 4
20	M.	6	3. 34	171. 48	177. 43	7. 57	5. 47
21	Tu.	7	4. 18	183. 31	189. 14	3. 35 N	1. 23 N
22	W.	8	5. 0	194. 52	200. 28	0. 50 S	3. 1 S
23	Th.	9	5. 42	206. 3	211. 39	5. 9	7. 14
24	F.	10	6. 25	217. 18	222. 59	9. 14	11. 9
25	Sa.	11	7. 9	228. 45	234. 37	12. 57	14. 38
26	Sun.	12	7. 54	240. 35	246. 41	16. 10	17. 32
27	M.	13	8. 42	252. 55	259. 16	18. 44	19. 44
28	Tu.	14	9. 32	265. 45	272. 22	20. 30	21. 2
29	W.	15	10. 24	279. 5	285. 53	21. 19	21. 19
30	Th.	16	11. 17	292. 45	299. 39	21. 3	20. 30
31	F.	17	12. 10	306. 34	313. 29	19. 40	18. 34

Days of the Month.	Days of the Week.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midnight.
		M. S.	M. S.	M. S.	M. S.		
1	W.	15. 5	15. 9	55. 22	55. 36	5120	5102
2	Th.	15. 13	15. 17	55. 50	56. 5	5084	5064
3	F.	15. 21	15. 25	56. 20	56. 35	5045	5026
4	Sa.	15. 29	15. 34	56. 50	57. 6	5006	4986
5	Sun.	15. 38	15. 42	57. 21	57. 36	4967	4949
6	M.	15. 46	15. 50	57. 51	58. 6	4930	4911
7	Tu.	15. 54	15. 58	58. 21	58. 35	4892	4875
8	W.	16. 1	16. 5	58. 48	59. 1	4859	4843
9	Th.	16. 8	16. 11	59. 13	59. 24	4828	4815
10	F.	16. 14	16. 16	59. 34	59. 43	4802	4792
11	Sa.	16. 18	16. 20	59. 50	59. 56	4783	4776
12	Sun.	16. 21	16. 21	59. 59	60. 0	4772	4771
13	M.	16. 20	16. 19	59. 58	59. 54	4773	4778
14	Tu.	16. 17	16. 15	59. 47	59. 38	4787	4798
15	W.	16. 12	16. 8	59. 26	59. 11	4812	4831
16	Th.	16. 3	15. 58	58. 53	58. 34	4853	4876
17	F.	15. 52	15. 45	58. 12	57. 49	4903	4932
18	Sa.	15. 39	15. 33	57. 26	57. 4	4961	4989
19	Sun.	15. 27	15. 21	56. 41	56. 19	5018	5046
20	M.	15. 15	15. 10	55. 59	55. 39	5072	5098
21	Tu.	15. 5	15. 1	55. 21	55. 5	5122	5142
22	W.	14. 57	14. 54	54. 52	54. 41	5159	5174
23	Th.	14. 52	14. 50	54. 33	54. 27	5185	5193
24	F.	14. 49	14. 49	54. 24	54. 23	5197	5198
25	Sa.	14. 50	14. 51	54. 25	54. 28	5195	5191
26	Sun.	14. 52	14. 54	54. 34	54. 42	5183	5173
27	M.	14. 57	15. 1	54. 52	55. 5	5159	5142
28	Tu.	15. 5	15. 9	55. 20	55. 36	5123	5102
29	W.	15. 13	15. 18	55. 52	56. 10	5081	5058
30	Th.	15. 23	15. 28	56. 28	56. 46	5035	5012
31	F.	15. 33	15. 38	57. 4	57. 22	4989	4965

DISTANCES of MOON'S Center from SUN, and from STARS EAST of her.

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	α Pegasi.	80. 17. 7	78. 51. 58	77. 26. 43	76. 1. 23	74. 35. 58	73. 10. 30	71. 45. 0	70. 19. 28
2		68. 53. 55	67. 28. 22	66. 2. 53	64. 37. 24	63. 11. 59	61. 46. 38	60. 21. 25	58. 56. 21
3		57. 31. 26	56. 6. 41	54. 42. 12	53. 18. 1	51. 54. 10	50. 30. 41	49. 7. 41	47. 45. 8
4		46. 23. 6							
4	α Arietis.	86. 55. 14	85. 20. 44	83. 46. 3	82. 11. 12	80. 36. 10	79. 0. 56	77. 25. 36	75. 50. 9
5		74. 14. 34	72. 38. 50	71. 2. 58	69. 27. 0	67. 50. 56	66. 14. 45	64. 38. 30	63. 2. 11
6		61. 25. 50	59. 49. 26	58. 13. 1	56. 36. 36	55. 0. 13	53. 23. 51	51. 47. 53	50. 11. 19
7		48. 35. 9							
7	Aldebaran.	78. 32. 56	76. 50. 20	75. 7. 33	73. 24. 36	71. 41. 28	69. 58. 9	68. 14. 39	66. 30. 58
8		64. 47. 5	63. 3. 1	61. 18. 46	59. 34. 20	57. 49. 44	56. 4. 57	54. 20. 0	52. 34. 53
9		50. 49. 35							
6	The Sun.	117. 5. 3	115. 29. 36	113. 53. 58	112. 18. 9	110. 42. 8	109. 5. 56	107. 29. 33	105. 52. 58
7		104. 16. 12	103. 39. 15	101. 2. 7	99. 24. 48	97. 47. 19	96. 9. 39	94. 31. 48	92. 53. 46
8		91. 15. 34	89. 37. 11	87. 58. 38	86. 19. 55	84. 41. 2	83. 1. 59	81. 22. 46	79. 43. 24
9		78. 3. 52	76. 24. 11	74. 44. 21	73. 4. 22	71. 24. 15	69. 44. 0	68. 3. 37	66. 23. 7
10									

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
11	The Sun.	64. 42. 30	63. 1. 45	61. 20. 54	59. 39. 57	57. 58. 54	56. 17. 45	54. 36. 32	52. 55. 14
12		51. 13. 52	49. 32. 27	47. 51. 0	46. 9. 30	44. 27. 58	42. 46. 25	41. 4. 51	39. 23. 17
13		37. 41. 42							
17	Spica ☿	71. 0. 30	69. 19. 1	67. 37. 53	65. 57. 7	64. 16. 44	62. 36. 43	60. 57. 5	59. 17. 49
18		57. 38. 56	56. 0. 26	54. 22. 20	52. 44. 38	51. 7. 19	49. 30. 24	47. 53. 54	46. 17. 49
19		44. 42. 9	43. 6. 54	41. 32. 5	39. 57. 43	38. 23. 47	36. 50. 18	35. 17. 19	33. 44. 50
20		32. 12. 51	30. 41. 21	29. 10. 24	27. 40. 5	26. 10. 27	24. 41. 31	23. 13. 21	21. 45. 59
21		20. 19. 28							
21	Antares.	65. 41. 47	64. 11. 0	62. 40. 29	61. 10. 14	59. 40. 16	58. 10. 33	56. 41. 5	55. 11. 51
22		53. 42. 52	52. 14. 7	50. 45. 37	49. 17. 20	47. 49. 17	46. 21. 28	44. 53. 52	43. 26. 30
23		41. 59. 22	40. 32. 28	39. 5. 48	37. 39. 23	36. 13. 15	34. 47. 23	33. 21. 47	31. 56. 29
24		30. 31. 31	29. 6. 58	27. 42. 50	26. 19. 8	24. 55. 53			
24	α Aquilæ.	69. 20. 14	68. 4. 23	66. 48. 44	65. 33. 19	74. 25. 26	73. 8. 53	71. 52. 30	70. 36. 17
25		59. 20. 4	58. 6. 21	56. 53. 1	55. 40. 5	64. 18. 8	63. 3. 10	61. 48. 30	60. 34. 8
26		49. 42. 51				54. 27. 36	53. 15. 35	52. 4. 8	50. 53. 13
27	α Pegasi.	95. 10. 11	93. 46. 48	92. 23. 14	90. 59. 27	89. 35. 29	88. 11. 19	86. 46. 59	85. 22. 28
28		83. 57. 46	82. 32. 54	81. 7. 53	79. 42. 43	78. 17. 24	76. 51. 56	75. 26. 21	74. 0. 38
29		72. 34. 48	71. 8. 53	69. 42. 54	68. 16. 52	66. 50. 47	65. 24. 40	63. 58. 33	62. 32. 26
30		61. 6. 22	59. 40. 20	58. 14. 26	56. 48. 41	55. 23. 6	53. 57. 45	52. 32. 42	51. 7. 56
31		49. 43. 31							
31	α Arietis.	90. 44. 25	89. 8. 53	87. 33. 13	85. 57. 18	84. 21. 10	82. 44. 47	81. 8. 11	79. 31. 26
A 1		77. 54. 30							

DISTANCES of MOON's Center from SUN, and from STARS WEST of her.

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Antares.	24. 10. 36	25. 37. 37	27. 5. 23	28. 33. 50	30. 2. 56	31. 32. 38	33. 2. 54	34. 33. 40
2		36. 4. 54	37. 36. 34	39. 8. 37	40. 41. 3	42. 13. 51	43. 46. 59	45. 20. 28	46. 54. 16
3		48. 28. 22	50. 2. 46	51. 37. 27	53. 12. 25	54. 47. 39	56. 23. 9	57. 58. 54	59. 34. 55
4		61. 11. 11	62. 47. 41	64. 24. 25	66. 1. 24	67. 38. 37	69. 16. 3	70. 53. 42	72. 31. 34
5		74. 9. 40	75. 47. 59	77. 26. 30	79. 5. 14	80. 44. 10	82. 23. 18	84. 2. 39	85. 42. 12
6		87. 21. 56	89. 1. 51	90. 41. 58	92. 22. 17	94. 2. 46	95. 43. 26	97. 24. 17	99. 5. 19
7		100. 46. 31	102. 27. 53	104. 9. 26	105. 51. 9	107. 33. 2			
7	α Aquilæ.	69. 12. 25	70. 41. 26	72. 10. 54	73. 40. 48	63. 21. 28	64. 48. 23	66. 15. 52	67. 43. 53
8		81. 15. 40	82. 47. 33	84. 19. 41	85. 52. 3	75. 11. 5	76. 41. 44	78. 12. 44	79. 44. 3
9						87. 24. 38			
9	Fomalhaut.	59. 19. 6	60. 58. 41	62. 38. 40	64. 18. 59	52. 45. 3	54. 22. 53	56. 1. 11	57. 39. 56
10		72. 45. 2	74. 27. 0	76. 9. 9	77. 51. 29	65. 59. 38	67. 40. 35	69. 21. 48	71. 3. 17
11		86. 25. 20	88. 8. 25	89. 51. 32	91. 34. 42	79. 34. 0	81. 16. 40	82. 55. 27	84. 42. 20
12						93. 17. 53			
12	α Arietis.	40. 50. 42	42. 30. 32	44. 10. 55	45. 51. 47	34. 18. 34	35. 55. 23	37. 33. 3	39. 11. 30
13		54. 20. 50	56. 3. 17	57. 45. 50	59. 28. 28	47. 33. 3	49. 14. 37	50. 56. 28	52. 38. 33
14						61. 11. 0			

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
19	The Sun.	40. C. 34	41. 30. 18	42. 59. 42	44. 28. 46	45. 57. 29	47. 25. 52	48. 53. 57	50. 21. 43
20		51. 49. 10	53. 16. 19	54. 43. 11	56. 9. 45	57. 36. 2	59. 2. 1	60. 27. 44	61. 53. 11
21		63. 18. 23	64. 43. 20	66. 8. 2	67. 33. 30	68. 56. 45	70. 20. 47	71. 44. 36	73. 8. 14
22		74. 31. 40	75. 54. 55	77. 18. 0	78. 40. 55	80. 3. 41	81. 26. 18	82. 48. 47	84. 11. 9
23		85. 33. 24	86. 55. 33	88. 17. 36	89. 39. 35	91. 1. 29	92. 23. 19	93. 45. 6	95. 6. 50
24		96. 28. 31	97. 50. 11	99. 11. 51	100. 33. 30	101. 55. 9	103. 16. 49	104. 38. 31	106. 0. 15
25		107. 22. 2	108. 43. 52	110. 5. 45	111. 27. 42	112. 49. 44	114. 11. 51	115. 34. 4	116. 56. 23
26		118. 18. 49	119. 41. 22	121. 4. 3					
23	Regulus.	71. 0. 31	72. 29. 16	73. 58. 0	75. 26. 44	65. 5. 12	66. 34. 6	68. 2. 57	69. 31. 45
24		82. 50. 41				76. 55. 28	78. 24. 13	79. 53. 0	81. 21. 49
25									
25	Spica μ .	29. 39. 37	31. 5. 46	32. 32. 11	33. 58. 52	35. 25. 48	36. 52. 59	38. 20. 24	39. 48. 3
26		41. 15. 56	42. 44. 1	44. 12. 19	45. 40. 50	47. 9. 34	48. 38. 31	50. 7. 42	51. 37. 6
27		53. 6. 44	54. 36. 35	56. 6. 39	57. 36. 57	59. 7. 30	60. 38. 17	62. 9. 19	63. 40. 36
28		65. 12. 8							
28	Antares.	20. 29. 51	21. 54. 9	23. 19. 31	24. 45. 53	26. 13. 11	27. 41. 21	29. 10. 19	30. 40. 1
29		32. 10. 21	33. 41. 14	35. 12. 39	36. 44. 37	38. 17. 4	39. 49. 57	41. 23. 10	42. 57. 0
30		44. 31. 10	46. 5. 44	47. 40. 40	49. 15. 58	50. 51. 38	52. 27. 38	54. 3. 58	55. 40. 38
31		57. 17. 38	58. 54. 58	60. 32. 36	62. 10. 32	63. 48. 46	65. 27. 17	67. 6. 4	68. 45. 7
A. 1		70. 24. 25							

Configurations of the SATELLITES of JUPITER,
at 11 o'Clock at Night.

1				¹ ⊙	²	³	⁴
2	1●		³	⊙	²		⁴
3		²	²	⊙	¹	⁴	
4		³	²	⊙	¹	⁴	
5			³	⊙	¹	²	
6	2●	¹		⊙		³	
7		⁴	²	⊙	¹	³	
8		⁴		⊙	²	³	
9		⁴		⊙	²		1●
10	1.0	⁴	³	⊙			
11		3 0 4	²	⊙	¹		
12		3 0 4		⊙	¹	²	
13			¹	⊙	²	3 0 4	
14			²	⊙	¹	3 0 4	
15			¹	⊙	²	³	⁴
16	3●			⊙	¹	²	⁴
17	1.0	³	²	⊙			⁴
18		³	²	⊙	¹		⁴
19		³		⊙	¹	²	⁴
20			¹	⊙	²	³	⁴
21		²	⁴	⊙	¹	³	
22	2.0	⁴	¹	⊙		³	
23		⁴		⊙	1 0 3	²	
24	⁴	³	²	⊙	¹		
25	⁴	³	²	⊙			1●
26	⁴	³		⊙	¹	²	
27		⁴	¹	⊙	³	²	
28		⁴	²	⊙	¹	³	
29	4.0		¹	⊙	²	³	
30				⊙	1 0 3	²	⁴
31			³	⊙	²		⁴

Days of the Month.	Days of the Week.	Sundays, Holidays, Terms, &c.	Phases of the MOON.	
			D. H. M.	
			<i>Last Quarter</i> - - - -	7. 6. 47
			<i>New Moon</i> - - - -	14. 5. 53
			<i>First Quarter</i> - - - -	22. 3. 26
			<i>Full Moon</i> - - - -	29. 18. 37
			Other Phenomena.	
			D. H. M.	
1	Sa.	Lammas-Day.	1. 2. 45	☾ γ υ ♀
2	Sun.	9th Sunday after Trinity.	5. 53	☾ δ υ ♀
3	M.		15. 6	☾ ε υ ♀
4	Tu.		2. 21. 52	☾ ι ad ↓ ☿
5	W.		22. 39	☾ κ ad ↓ ☿
6	Th.	Transfig. of our Lord.	22. 46	☾ λ ad ↓ ☿
7	F.	Name of Jesus.	6. - - -	☿ Stationary.
8	Sa.		12. 19	Im. of ζ ad ξ Ceti, *14'½ N. of α's Cent.
9	Sun.	10th Sunday after Trinity.	12. 50½	Em. *12'¾ North.
10	M.	St. Lawrence.	20. 35	☾ μ Ceti.
11	Tu.	Prs. of Brunswick born.	8. 12. 53	☾ γ δ
12	W.	Pr. of Wales born 1762.	14. 41	☾ ι ad δ ♀
13	Th.		15. 8	☾ κ ad δ ♀
14	F.		9. 21. 7	☾ ζ δ
15	Sa.		10. 17. 42	☾ ν π
16	Sun.	11th Sun. after Trin. Pr.	11. 7. 49	☾ ζ π
17	M.	[Fred. born.]	12. 18. 14	☾ ξ
18	Tu.		17. 6. 7	☾ c ♀
19	W.		21. 13. 0	☾ γ =
20	Th.		17. 32	☾ η =
21	F.	Pr. W. Henry born.	22. 34	☾ θ =
22	Sa.		22. 17. 59	☉ enters ♀
23	Sun.	12th Sunday after Trinity.	24. 17. 6	☾ ι ad μ ♀
24	M.	St. Bartholomew.	25. 15. 51	☾ ο ♀
25	Tu.		18. 16	☾ π ♀
26	W.		28. 11. 50½	Im. of γ υ ♀ *4' N. of α's
27	Th.		13. 1	Em. *2½ N. [Cent.]
28	F.	St. Augustine.	15. 34	Im. of δ υ ♀ *1½ S. of α's
29	Sa.	St. John Bap. beheaded.	16. 31½	Em. *2' South. [Cent.]
30	Sun.	13th Sunday after Trinity.	23. 45	☾ ε υ ♀
31	M.		30. 5. 56	☾ ι ad ↓ ☿
			6. 41	☾ κ ad ↓ ☿
			6. 48	☾ λ ad ↓ ☿

Days of the Month.	Days of the Week.	THE SUN'S			Equation of Time.	Diff.
		Longitude.	Rt. Ascens. in Time.	Declin. North.		
		S. D. M. S.	H. M. S.	D. M. S.	M. S. Add.	S.
1	Sa.	4. 9. 5. 55	8. 46. 9, 0	17. 59. 59	5. 54, 5	4, 0
2	Sun.	4. 10. 3. 20	8. 50. 1, 6	17. 44. 41	5. 50, 5	4, 5
3	M.	4. 11. 0. 47	8. 53. 53, 6	17. 29. 5	5. 46, 0	5, 1
4	Tu.	4. 11. 58. 15	8. 57. 45, 0	17. 13. 12	5. 40, 9	5, 6
5	W.	4. 12. 55. 44	9. 1. 35, 9	16. 57. 2	5. 35, 3	6, 2
6	Th.	4. 13. 53. 15	9. 5. 26, 2	16. 40. 36	5. 29, 1	6, 8
7	F.	4. 14. 50. 47	9. 9. 15, 9	16. 23. 53	5. 22, 3	7, 4
8	Sa.	4. 15. 48. 20	9. 13. 5, 0	16. 6. 54	5. 14, 9	8, 0
9	Sun.	4. 16. 45. 55	9. 16. 53, 6	15. 49. 40	5. 6, 9	8, 5
10	M.	4. 17. 43. 32	9. 20. 41, 7	15. 32. 11	4. 58, 4	9, 0
11	Tu.	4. 18. 41. 10	9. 24. 29, 2	15. 14. 26	4. 49, 4	9, 6
12	W.	4. 19. 38. 49	9. 28. 16, 2	14. 56. 26	4. 39, 8	10, 1
13	Th.	4. 20. 36. 30	9. 32. 2, 6	14. 38. 12	4. 29, 7	10, 7
14	F.	4. 21. 34. 12	9. 35. 48, 4	14. 19. 44	4. 19, 0	11, 2
15	Sa.	4. 22. 31. 56	9. 39. 33, 7	14. 1. 3	4. 7, 8	11, 7
16	Sun.	4. 23. 29. 41	9. 43. 18, 5	13. 42. 8	3. 56, 1	12, 3
17	M.	4. 24. 27. 27	9. 47. 2, 8	13. 23. 0	3. 48, 8	12, 8
18	Tu.	4. 25. 25. 15	9. 50. 46, 6	13. 3. 39	3. 31, 0	13, 3
19	W.	4. 26. 23. 4	9. 54. 29, 8	12. 44. 5	3. 17, 7	13, 7
20	Th.	4. 27. 20. 54	9. 58. 12, 6	12. 24. 20	3. 4, 0	14, 3
21	F.	4. 28. 18. 45	10. 1. 54, 8	12. 4. 23	2. 49, 7	14, 7
22	Sa.	4. 29. 16. 37	10. 5. 36, 6	11. 44. 14	2. 35, 0	15, 2
23	Sun.	5. 0. 14. 30	10. 9. 17, 9	11. 23. 54	2. 19, 8	15, 7
24	M.	5. 1. 12. 24	10. 12. 58, 7	11. 3. 24	2. 4, 1	16, 1
25	Tu.	5. 2. 10. 19	10. 16. 39, 1	10. 42. 44	1. 48, 0	16, 6
26	W.	5. 3. 8. 16	10. 20. 19, 1	10. 21. 54	1. 31, 4	16, 9
27	Th.	5. 4. 6. 14	10. 23. 58, 7	10. 0. 53	1. 14, 5	17, 3
28	F.	5. 5. 4. 14	10. 27. 37, 9	9. 39. 42	0. 57, 2	17, 6
29	Sa.	5. 6. 2. 15	10. 31. 16, 7	9. 18. 23	0. 39, 6	18, 0
30	Sun.	5. 7. 0. 18	10. 34. 55, 2	8. 56. 55	0. 21, 6	18, 4
31	M.	5. 7. 58. 22	10. 38. 33, 4	8. 35. 18	0. 3, 2	

Days.	Time of O's Semidiam. pass. Merid.	THE SUN'S			Place of the D's Node.
	M. S.	Semi- diameter.	Hourly Motion.	Logarith. Distance.	S. D. M.
1	1. 6,5	15. 49,0	2. 23,6	0. 006241	3. 28. 41
7	1. 6,0	15. 49,9	2. 23,9	0. 005860	3. 28. 22
13	1. 5,5	15. 50,9	2. 24,2	0. 005417	3. 28. 3
19	1. 5,1	15. 52,1	2. 24,6	0. 004896	3. 27. 44
25	1. 4,7	15. 53,3	2. 24,9	0. 004307	3. 27. 25

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
Emerfions.		Emerfions.			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
* 1	13. 22. 50	3	23. 28. 15	6	21. 35. 46 Im.
3	7. 51. 40	* 7	12. 46. 17	7	1. 8. 31 E.
5	2. 20. 33	11	2. 4. 26	14	1. 37. 27 Im.
6	20. 49. 31	14	15. 22. 44	14	5. 10. 24 E.
8	15. 18. 30	18	4. 41. 8	21	5. 39. 42 Im.
* 10	9. 47. 31	21	17. 59. 37	* 21	9. 12. 52 E.
12	4. 16. 33	25	7. 18. 11	* 28	9. 42. 32 Im.
13	22. 45. 38	28	20. 36. 50	28	13. 15. 50 E.
15	17. 14. 45				
17	11. 43. 55				
19	6. 13. 6				
21	0. 42. 20				
22	19. 11. 35				
24	13. 40. 53				
* 26	8. 10. 13				
28	2. 39. 34				
29	21. 8. 56				
31	15. 38. 20				
IV. Satellite.					
				6	18. 6. 30 Im.
				6	22. 37. 0 E.
				* 23	12. 18. 17 Im.
				23	16. 51. 30 E.

THE PLANETS						
Days	Heliocentric		Geocentric		Declin.	Passage Merid.
	Long.	Lat.	Long.	Lat.		
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
MERCURY. Gr. Elong. 14 ^a .						
1	10. 24. 7	6. 56 S	3. 29. 51	4. 18 S	16. 0 N	23. 12
4	11. 5. 59	6. 35	3. 28. 55	3. 40	16. 49	22. 59
7	11. 18. 56	5. 53	3. 28. 54	2. 53	17. 34	22. 49
10	0. 3. 8	4. 46	3. 29. 56	2. 4	18. 10	22. 44
13	0. 18. 39	3. 13	4. 2. 1	1. 13	18. 33	22. 44
16	1. 5. 32	1. 16 S	4. 5. 5	0. 25 S	18. 36	22. 48
19	1. 23. 33	0. 56 N	4. 9. 4	0. 17 N	18. 17	22. 55
22	2. 12. 18	3. 7	4. 13. 48	0. 51	17. 32	23. 4
25	3. 1. 13	4. 59	4. 19. 5	1. 18	16. 21	23. 15
28	3. 19. 37	6. 17	4. 24. 44	1. 35	14. 48	23. 26
31	4. 6. 58	6. 55	5. 0. 32	1. 45	12. 56	23. 38
VENUS.						
1	2. 20. 13	0. 19 N	3. 19. 4	0. 9 N	22. 15 N	22. 38
7	2. 29. 54	0. 53	3. 26. 24	0. 24	21. 17	22. 46
13	3. 9. 37	1. 25	4. 3. 45	0. 38	19. 57	22. 54
19	3. 19. 21	1. 55	4. 11. 7	0. 50	18. 16	23. 2
25	3. 29. 5	2. 22	4. 18. 30	1. 1	16. 16	23. 10
MARS.						
1	3. 24. 13	1. 41 N	3. 29. 55	1. 3 N	21. 13 N	23. 22
7	3. 26. 57	1. 44	4. 3. 47	1. 5	20. 22	23. 15
13	3. 29. 40	1. 45	4. 7. 38	1. 6	19. 27	23. 8
19	4. 2. 22	1. 47	4. 11. 29	1. 8	18. 27	23. 1
25	4. 5. 3	1. 48	4. 15. 18	1. 9	17. 22	22. 55
JUPITER.						
1	10. 3. 7	0. 32 S	10. 1. 38	0. 40 S	20. 28 S	11. 28
7	10. 3. 38	0. 33	10. 0. 53	0. 41	20. 39	11. 2
13	10. 4. 10	0. 34	10. 0. 11	0. 41	20. 48	10. 36
19	10. 4. 41	0. 34	9. 29. 33	0. 42	20. 57	10. 11
25	10. 5. 12	0. 35	9. 28. 58	0. 42	21. 4	9. 47
SATURN.						
1	2. 5. 37	1. 49 S	2. 11. 4	1. 43 S	20. 26 N	19. 50
7	2. 5. 50	1. 48	2. 11. 34	1. 44	20. 29	19. 29
13	2. 6. 4	1. 48	2. 12. 2	1. 44	20. 32	19. 8
19	2. 6. 17	1. 47	2. 12. 27	1. 45	20. 35	18. 48
25	2. 6. 30	1. 47	2. 12. 48	1. 46	20. 37	18. 27

		THE MOON'S							
Days of the Month.	Days of the Week.	Longitude.				Latitude.			
		Noon.		Midnight.		Noon.		Midnight.	
		S. D. M. S.		S. D. M. S.		D. M. S.		D. M. S.	
1	Sa.	10. 17. 22. 53		10. 24. 6. 35		1. 38. 34 S		2. 13. 11 S	
2	Sun.	11. 0. 54. 1		11. 7. 44. 59		2. 46. 13		3. 17. 8	
3	M.	11. 14. 39. 11		11. 21. 36. 16		3. 45. 26		4. 10. 33	
4	Tu.	11. 28. 35. 53		0. 5. 37. 37		4. 32. 6		4. 49. 40	
5	W.	0. 12. 41. 11		0. 19. 46. 3		5. 2. 55		5. 11. 37	
6	Th.	0. 26. 52. 1		1. 3. 58. 34		5. 15. 35		5. 14. 43	
7	F.	1. 11. 5. 30		1. 18. 12. 24		5. 9. 1		4. 58. 37	
8	Sa.	1. 25. 19. 2		2. 2. 25. 2		4. 43. 41		4. 24. 20	
9	Sun.	2. 9. 30. 13		2. 16. 34. 14		4. 1. 1		3. 34. 5	
10	M.	2. 23. 36. 51		3. 0. 37. 47		3. 3. 57		2. 31. 15	
11	Tu.	3. 7. 36. 45		3. 14. 33. 27		1. 56. 23		1. 20. 0	
12	W.	3. 21. 27. 37		3. 28. 18. 57		0. 42. 40 S		0. 4. 58 S	
13	Th.	4. 5. 7. 13		4. 11. 52. 10		0. 32. 28 N		1. 9. 9 N	
14	F.	4. 18. 33. 31		4. 25. 11. 11		1. 44. 29		2. 18. 4	
15	Sa.	5. 1. 44. 54		5. 8. 14. 40		2. 49. 26		3. 18. 15	
16	Sun.	5. 14. 40. 23		5. 21. 2. 5		3. 44. 13		4. 7. 6	
17	M.	5. 27. 19. 51		6. 3. 33. 48		4. 26. 43		4. 42. 56	
18	Tu.	6. 9. 44. 12		6. 15. 51. 16		4. 55. 42		5. 4. 57	
19	W.	6. 21. 55. 23		6. 27. 56. 54		5. 10. 41		5. 12. 57	
20	Th.	7. 3. 56. 17		7. 9. 54. 4		5. 11. 45		5. 7. 12	
21	F.	7. 15. 50. 40		7. 21. 46. 47		4. 59. 23		4. 48. 23	
22	Sa.	7. 27. 42. 52		8. 3. 39. 35		4. 34. 16		4. 17. 11	
23	Sun.	8. 9. 37. 33		8. 15. 37. 21		3. 57. 16		3. 34. 39	
24	M.	8. 21. 39. 34		8. 27. 44. 51		3. 9. 30		2. 42. 0	
25	Tu.	9. 3. 53. 40		9. 10. 6. 37		2. 12. 22		1. 40. 52	
26	W.	9. 16. 24. 7		9. 22. 46. 32		1. 7. 46 N		0. 33. 26 N	
27	Th.	9. 29. 14. 14		10. 5. 47. 24		0. 1. 47 S		0. 37. 26 S	
28	F.	10. 12. 26. 11		10. 19. 10. 37		1. 13. 3		1. 48. 4	
29	Sa.	10. 26. 0. 32		11. 2. 55. 44		2. 22. 0		2. 54. 15	
30	Sun.	11. 9. 55. 46		11. 17. 0. 13		3. 24. 17		3. 51. 28	
31	M.	11. 24. 8. 26		0. 1. 19. 41		4. 15. 13		4. 35. 6	

		THE M O O N ' s					
Days of the Month.	Days of the Week.	Age.	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight.	Noon.	Midnight.
			D. H. M.	D. M.	D. M.	D. M.	D. M.
1	Sa.	18	13. 3	320. 21	327. 11	17. 12 S	15. 35 S
2	Sun.	19	13. 55	333. 58	340. 41	13. 45	11. 43
3	M.	20	14. 46	347. 20	353. 57	9. 31	7. 10
4	Tu.	21	15. 36	0. 31	7. 5	4. 44 S	2. 12 S
5	W.	22	16. 27	13. 38	20. 13	0. 22 N	2. 56 N
6	Th.	23	17. 18	26. 50	33. 31	5. 28	7. 54
7	F.	24	18. 11	40. 17	47. 9	10. 16	12. 28
8	Sa.	25	19. 6	54. 9	61. 15	14. 31	16. 21
9	Sun.	26	20. 3	68. 28	75. 47	17. 56	19. 14
10	M.	27	21. 1	83. 12	90. 40	20. 15	20. 56
11	Tu.	28	21. 59	98. 10	105. 39	21. 19	21. 20
12	W.	29	22. 56	113. 5	120. 25	21. 3	20. 25
13	Th.	30	23. 50	127. 37	134. 40	19. 32	18. 21
14	F.	1	0	141. 33	148. 16	16. 56	15. 18
15	Sa.	2	0. 41	154. 48	161. 9	13. 30	11. 33
16	Sun.	3	1. 29	167. 21	173. 24	9. 29	7. 20
17	M.	4	2. 14	179. 20	185. 9	5. 8	2. 54 N
18	Tu.	5	2. 57	190. 53	196. 34	0. 40 N	1. 33 S
19	W.	6	3. 40	202. 12	207. 50	3. 44 S	5. 53
20	Th.	7	4. 23	213. 28	219. 8	7. 57	9. 56
21	F.	8	5. 7	224. 51	230. 38	11. 49	13. 35
22	Sa.	9	5. 52	236. 31	242. 29	15. 13	16. 42
23	Sun.	10	6. 38	248. 35	254. 48	18. 0	19. 8
24	M.	11	7. 26	261. 8	267. 36	20. 3	20. 45
25	Tu.	12	8. 17	274. 10	280. 52	21. 12	21. 24
26	W.	13	9. 10	287. 39	294. 30	21. 20	20. 59
27	Th.	14	10. 3	301. 24	308. 19	20. 22	19. 27
28	F.	15	10. 57	315. 15	322. 11	18. 16	16. 48
29	Sa.	16	11. 51	329. 5	335. 57	15. 5	13. 9
30	Sun.	17	12. 42	342. 47	349. 34	11. 0	8. 41
31	M.	18	13. 35	356. 19	3. 3	6. 14	3. 41

Days of the Month.	Days of the Week.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
1	Sa.	15. 43	15. 47	57. 39	57. 55	4945	4924
2	Sun.	15. 51	15. 55	58. 10	58. 24	4906	4889
3	M.	15. 58	16. 1	58. 37	58. 48	4872	4859
4	T.	16. 4	16. 7	58. 58	59. 7	4846	4835
5	W.	16. 8	16. 10	59. 14	59. 19	4827	4821
6	Th.	16. 11	16. 12	59. 23	59. 26	4816	4812
7	F.	16. 12	16. 12	59. 27	59. 27	4811	4811
8	Sa.	16. 12	16. 11	59. 26	59. 24	4812	4815
9	Sun.	16. 10	16. 9	59. 20	59. 16	4820	4824
10	M.	16. 7	16. 5	59. 10	59. 3	4832	4841
11	T.	16. 3	16. 0	58. 54	58. 43	4852	4865
12	W.	15. 57	15. 53	58. 31	58. 18	4880	4896
13	Th.	15. 49	15. 45	58. 3	57. 47	4915	4934
14	F.	15. 40	15. 35	57. 30	57. 12	4956	4979
15	Sa.	15. 30	15. 25	56. 53	56. 35	5003	5026
16	Sun.	15. 20	15. 15	56. 16	55. 58	5050	5073
17	M.	15. 10	15. 6	55. 41	55. 25	5095	5116
18	Tu.	15. 2	14. 58	55. 10	54. 57	5136	5153
19	W.	14. 55	14. 53	54. 45	54. 36	5169	5181
20	Th.	14. 51	14. 49	54. 29	54. 24	5190	5197
21	F.	14. 49	14. 49	54. 22	54. 22	5199	5199
22	Sa.	14. 50	14. 51	54. 25	54. 30	5195	5189
23	Sun.	14. 53	14. 56	54. 38	54. 48	5178	5165
24	M.	14. 59	15. 3	55. 0	55. 15	5149	5129
25	Tu.	15. 8	15. 13	55. 33	55. 52	5106	5081
26	W.	15. 19	15. 25	56. 12	56. 33	5055	5028
27	Th.	15. 31	15. 37	56. 55	57. 18	5000	4971
28	F.	15. 43	15. 49	57. 41	58. 4	4942	4913
29	Sa.	15. 55	16. 0	58. 25	58. 45	4887	4863
30	Sun.	16. 5	16. 10	59. 3	59. 19	4841	4821
31	M.	16. 13	16. 16	59. 32	59. 42	4805	4793

DISTANCES of MOON's Center from SUN, and from STARS EAST of her.

Days	Stars Names.	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	♈ Aries.	77. 54. 30	76. 17. 20	74. 39. 59	73. 2. 29	71. 24. 50	69. 47. 3	68. 9. 10	66. 31. 12	58. 20. 20	56. 42. 6	55. 3. 55	53. 25. 49	50. 27. 46			
2		64. 53. 8	63. 14. 59	61. 36. 47	59. 58. 34	45. 17. 24	43. 40. 28	42. 3. 55	40. 27. 46	61. 1. 42	59. 16. 19	57. 30. 51	55. 45. 19				
3		51. 47. 47	50. 9. 51	48. 32. 8	46. 54. 39	46. 56. 38	45. 10. 42	43. 24. 44	41. 38. 43	32. 48. 14	31. 2. 3	29. 15. 52	27. 29. 41				
4		38. 52. 3	66. 17. 18	64. 32. 12	62. 47. 0	18. 28. 56											
5	♏ Aldebaran.	68. 2. 18	52. 14. 2	50. 28. 18	48. 42. 30	61. 1. 42	59. 16. 19	57. 30. 51	55. 45. 19	46. 56. 38	45. 10. 42	43. 24. 44	41. 38. 43				
6		53. 59. 42	38. 6. 36	36. 20. 30	34. 34. 23	32. 48. 14	31. 2. 3	29. 15. 52	27. 29. 41	32. 48. 14	31. 2. 3	29. 15. 52	27. 29. 41				
7		39. 52. 40	23. 57. 20	22. 11. 11	20. 25. 3	18. 28. 56											
8	☉ The Sun.	25. 43. 30	118. 28. 16	116. 49. 40	115. 11. 0	113. 32. 16	111. 53. 29	110. 14. 38	108. 35. 44	113. 32. 16	111. 53. 29	110. 14. 38	108. 35. 44				
9		120. 6. 47	105. 17. 51	103. 38. 52	101. 59. 51	100. 20. 48	98. 41. 43	97. 2. 37	95. 23. 30	100. 20. 48	98. 41. 43	97. 2. 37	95. 23. 30				
10		106. 56. 48	92. 5. 13	90. 26. 4	88. 46. 55	87. 7. 47	85. 28. 39	83. 49. 31	82. 10. 23	87. 7. 47	85. 28. 39	83. 49. 31	82. 10. 23				
11		93. 44. 22	78. 52. 10	77. 13. 6	75. 34. 3	73. 55. 2	72. 16. 2	70. 37. 4	68. 58. 8	73. 55. 2	72. 16. 2	70. 37. 4	68. 58. 8				
12		80. 31. 16	65. 40. 24	64. 1. 37	62. 22. 54	60. 44. 14	59. 5. 37	57. 27. 5	55. 48. 37	60. 44. 14	59. 5. 37	57. 27. 5	55. 48. 37				
13	♋ Antares.	67. 19. 14	52. 31. 56	50. 53. 44	49. 15. 37	47. 37. 36	45. 59. 41	44. 21. 54	42. 44. 14	47. 37. 36	45. 59. 41	44. 21. 54	42. 44. 14				
14		54. 10. 14	39. 29. 16	79. 25. 23	77. 51. 17	76. 17. 27	74. 43. 54	73. 10. 38	71. 37. 39	47. 37. 36	45. 59. 41	44. 21. 54	42. 44. 14				
15		41. 6. 41	80. 59. 46	67. 0. 21	65. 28. 27	63. 56. 50	62. 25. 29	60. 54. 25	59. 23. 36	76. 17. 27	74. 43. 54	73. 10. 38	71. 37. 39				
16	♋ Antares.	82. 34. 27	68. 32. 31	56. 22. 47	53. 23. 1	51. 53. 32	50. 24. 18	48. 55. 19	47. 26. 36	63. 56. 50	62. 25. 29	60. 54. 25	59. 23. 36				
17		70. 4. 57	56. 22. 47	54. 52. 46	53. 23. 1	51. 53. 32	50. 24. 18	48. 55. 19	47. 26. 36	51. 53. 32	50. 24. 18	48. 55. 19	47. 26. 36				
18		57. 53. 4								51. 53. 32	50. 24. 18	48. 55. 19	47. 26. 36				

[illegible]

DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Antares.	70. 24. 25	72. 4. 2	73. 43. 53	75. 23. 58	77. 4. 18	78. 44. 52	80. 25. 38	82. 6. 37
2		83. 47. 50	85. 29. 15	87. 10. 51	88. 52. 39	90. 34. 38	92. 16. 47	93. 59. 6	95. 41. 35
3		97. 24. 13	99. 6. 59	100. 49. 54	102. 32. 56	104. 16. 5	105. 59. 21	107. 42. 43	109. 26. 10
4		III. 9. 43							
4	α Aquilæ.	66. 26. 21	67. 55. 32	69. 25. 8	70. 55. 9	72. 25. 33	73. 56. 18	75. 27. 21	76. 58. 41
5		78. 30. 17	80. 2. 7	81. 34. 7	83. 6. 18	84. 38. 39	86. 11. 7	87. 43. 41	89. 16. 19
6		90. 49. 1							
6	Fomalhaut.	56. 21. 28	57. 59. 58	59. 38. 45	61. 17. 48	62. 57. 7	64. 36. 40	66. 16. 26	67. 56. 23
7		69. 36. 32	71. 16. 49	72. 57. 14	74. 37. 46	76. 18. 24	77. 59. 6	79. 39. 52	81. 20. 41
8		83. 1. 32	84. 42. 25	86. 23. 18	88. 4. 11	89. 45. 4	91. 25. 56	93. 6. 46	94. 47. 33
9	α Arietis.	96. 28. 16							
9		37. 17. 8	38. 53. 14	40. 29. 54	42. 7. 6	43. 44. 49	45. 22. 58	47. 1. 31	48. 40. 24
10		50. 19. 34	51. 58. 57	53. 38. 32	55. 18. 18	56. 58. 13	58. 38. 15	60. 18. 21	61. 58. 30
11	Aldebaran.	63. 38. 41							
11		30. 49. 5	32. 33. 43	34. 18. 13	36. 2. 36	37. 46. 51	39. 30. 58	41. 14. 55	42. 58. 43
12		44. 42. 22	46. 25. 51	48. 9. 9	49. 52. 16	51. 35. 13	53. 17. 59	55. 0. 32	56. 42. 53
13		58. 25. 2							

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
17	The Sun.	44.31.56	45.56.22	47.20.36	48.44.37	38.51.59	40.17.19	41.42.25	43.7.17
18		55.41.57	57.4.53	58.27.40	59.50.18	50.8.27	51.32.6	52.55.34	54.18.51
19		66.41.30	68.3.25	69.25.15	70.47.0	61.12.47	62.35.8	63.57.22	65.19.29
20		77.34.48	78.56.15	80.17.42	81.39.9	72.8.40	73.30.16	74.51.49	76.13.20
21		88.26.33	89.48.9	91.9.49	92.31.33	83.0.35	84.22.2	85.43.30	87.5.0
22		99.21.41	100.44.4	102.6.36	103.29.17	93.53.22	95.15.17	96.37.18	97.59.26
23		110.25.13	111.48.59	113.12.58	114.37.11	104.52.7	106.15.7	107.38.18	109.1.40
24		121.41.47				116.1.37	117.26.17	118.51.12	120.16.22
25	Spica μ .	37.17.28	38.44.31	40.11.44	41.39.8	43.6.42	44.34.27	46.2.23	47.30.30
26		48.58.48	50.27.17	51.55.58	53.24.51	54.53.56	56.23.13	57.52.43	59.22.27
27		60.52.24	62.22.35	63.53.1	65.23.41	66.54.37	68.25.48	69.57.16	71.29.0
28		73.1.0							
29	Antares.	27.47.51	29.16.16	30.45.19	32.14.59	33.45.16	35.16.8	36.47.33	38.19.30
30		39.51.57	41.24.52	42.58.15	44.32.6	46.6.24	47.41.9	49.16.19	50.51.55
31		52.27.57	54.4.24	55.41.15	57.18.30	58.56.9	60.34.12	62.12.38	63.51.28
1		65.30.40	67.10.15	68.50.12	70.30.31	72.11.11	73.52.12	75.33.34	77.15.16
2	α Aquila.	78.57.18	80.39.39	82.22.19	84.5.17	85.48.33	87.32.5	89.15.53	90.59.57
3		92.44.17	94.28.51	96.13.39	97.58.40	99.43.54	101.29.19	103.14.55	105.0.42
4		106.46.38							
5		62.39.24	64.9.25	65.40.0	67.11.8	68.42.50	70.14.59	71.47.32	73.20.27
6		74.53.46							

CONFIGURATIONS of the SATELLITES of JUPITER
at 10 o'Clock at Night.

1		3.	.2	⊙	1.	.4
2	1.0		.3	⊙	.2	.4
3	3.0			⊙	1.	2.
4			2.	⊙	.1	.3
5			.1.	⊙	.2	4.3.
6				⊙	4	1.3.
7	2●		3.64 ¹	⊙		
8			4.3.	⊙	.2	1.
9		4.	.3	⊙	.2	1.0
10	4.			⊙	1.	2.
11	.4		2.	⊙	.1	.3
12	.4		.1.	⊙	.2	3
13		.4		⊙	.1	.2
14			.4.1	⊙	2.	3.
15			.3.	⊙	.2	.4
16			.3	⊙	.1	.2
17	1●		.3	⊙	.2	.4
18			2.	⊙	.1	.3
19			.2	⊙	.1	.2
20			.1.	⊙	.2	3.
21			.1	⊙	.3	2.
22			.3.	⊙	2.	4.
23	2.0 4●		.3	⊙	.1	.4
24			4.	⊙	.3	1.
25			.4.	⊙	.2	.3
26	4.		.2	⊙	.1	.3
27	4.			⊙	.1	.2
28	1.4		.1.	⊙	.2	3.
29		.4	.3.	⊙	2.	1.
30			.3.4	⊙	.1	.2
31			.3	⊙	.4	1.

I. SEPTEMBER 1793. 97

Days of the Month.	Days of the Week.	Sundays, Holidays, Terms, &c.	Phases of the MOON.	
			D. H. M.	
			<i>Last Quarter</i> - - - - -	5. 11. 57
			<i>New Moon</i> - - - - -	12. 18. 46
			<i>First Quarter</i> - - - - -	20. 21. 39
			<i>Full Moon</i> - - - - -	28. 4. 25
			Other Phenomena.	
			D. H. M.	
1	Tu.	Giles.	2. 19. 4	☾ 2 ad ☿ Ceti.
2	W.	London burnt, 1666, O.S.	3. 2. 28	☾ ☿ Ceti.
3	Th.		4. 20. 11	☾ 1 ad ☿
4	F.		20. 37	☾ 2 ad ☿
5	Sa.		6. 2. 44	☾ ☿
6	Sun.	14th Sunday after Trinity.	23. 33	☾ ☿
7	M.	Enurchus.	7. 12. 25½	Im. of ☿ ☿ * 10' ½ N. of ☿ 's
8	Tu.	Nativity of B.V. Mary.	13. 10	Em. * 5' ½ N. [Cent.
9	W.		20. 8	☾ ☿
10	Th.		9. 8. 13	☾ ☿
11	F.		10. 21. 3	☾ ☿
12	Sa.		12. - -	☿ ☿ ☿ diff. Lat. 44'.
13	Sun.	15th Sunday after Trinity.	17. 20. 52	☾ ☿
14	M.	Holy Crois.	18. 1. 24	☾ ☿
15	Tu.		6. 14½	Im. of ☿ ☿ * 4' ½ S. of ☿ 's
16	W.		7. 29½	Em. * 3' S. [Cent.
17	Th.	Lambert.	20. 1. 1	☾ ☿ Ophiuchi.
18	F.		21. 1. 41	☾ 1 ad ☿
19	Sa.		22. 0. 51	☾ ☿
			3. 18	☾ ☿
20	Sun.	16th Sunday after Trinity.	14. 32	☾ enters ☿
21	M.	St. Matthew.	23. - -	☾ Stationary.
22	Tu.	K. Geo. III. crowned, 1761	6. 4	Im. of ☿ ☿ * 13' ½ N. of ☿ 's
23	W.		6. 35½	Em. ☿ 14' ½ N. [Cent.
24	Th.		24. 21. 33	☾ ☿ ☿
25	F.		25. - -	☾ Stationary.
26	Sa.	St. Cyprian.	0. 41	☾ ☿ ☿
			9. 49	☾ ☿ ☿
27	Sun.	17th Sunday after Trinity.	26. 15. 59	☾ 1 ad ☿
28	M.		16. 43	☾ 2 ad ☿
29	Tu.	St. Michael. Prs. Royal b.	16. 51	☾ 3 ad ☿
30	W.	St. Jerome.	27. 13. 3	☾ 33 ☿
			30. 3. 17	☾ 2 ad ☿ Ceti.
			9. 39½	Im. of ☿ Ceti * 12' ½ N. of ☿ 's
			10. 22½	E. * 10' ½ N. [☿ 's Cent.

Days of the Month.	Days of the Week.	THE S U N's			Equation of Time.	Diff.
		Longitude.	R ^t . Ascen. <i>in Time.</i>	Declin. <i>North.</i>	<i>Sub.</i>	
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Tu.	5. 8. 56. 28	10. 42. 11, 2	8. 13. 33	0. 15, 5	18, 9
2	W.	5. 9. 54. 36	10. 45. 48, 8	7. 51. 40	0. 34, 4	19, 2
3	Th.	5. 10. 52. 47	10. 49. 26, 1	7. 29. 39	0. 53, 6	19, 4
4	F.	5. 11. 50. 59	10. 53. 3, 2	7. 7. 31	1. 13, 0	19, 7
5	Sa.	5. 12. 49. 13	10. 56. 39, 9	6. 45. 15	1. 32, 7	19, 8
6	Sun.	5. 13. 47. 29	11. 0. 16, 7	6. 22. 53	1. 52, 5	20, 1
7	M.	5. 14. 45. 48	11. 3. 53, 1	6. 0. 24	2. 12, 6	20, 2
8	Tu.	5. 15. 44. 9	11. 7. 29, 4	5. 37. 49	2. 32, 8	20, 3
9	W.	5. 16. 42. 31	11. 11. 5, 6	5. 15. 9	2. 53, 1	20, 5
10	Th.	5. 17. 40. 56	11. 14. 41, 6	4. 52. 22	3. 13, 6	20, 6
11	F.	5. 18. 39. 23	11. 18. 17, 5	4. 29. 31	3. 34, 2	20, 6
12	Sa.	5. 19. 37. 52	11. 21. 53, 4	4. 6. 35	3. 54, 8	20, 8
13	Sun.	5. 20. 36. 24	11. 25. 29, 1	3. 43. 34	4. 15, 6	20, 9
14	M.	5. 21. 34. 56	11. 29. 4, 7	3. 20. 30	4. 36, 5	20, 9
15	Tu.	5. 22. 33. 31	11. 32. 40, 3	2. 57. 22	4. 57, 4	20, 9
16	W.	5. 23. 32. 8	11. 36. 15, 9	2. 34. 10	5. 18, 3	21, 0
17	Th.	5. 24. 30. 46	11. 39. 51, 4	2. 10. 56	5. 39, 3	20, 9
18	F.	5. 25. 29. 27	11. 43. 27, 0	1. 47. 38	6. 0, 2	21, 0
19	Sa.	5. 26. 28. 8	11. 47. 2, 5	1. 24. 19	6. 21, 2	20, 9
20	Sun.	5. 27. 26. 52	11. 50. 38, 1	1. 0. 57	6. 42, 1	20, 9
21	M.	5. 28. 25. 37	11. 54. 13, 7	0. 37. 35	7. 3, 0	20, 8
22	Tu.	5. 29. 24. 24	11. 57. 49, 4	0. 14. 11 <i>South.</i>	7. 23, 8	20, 7
23	W.	6. 0. 23. 12	12. 1. 25, 1	0. 9. 14	7. 44, 5	20, 6
24	Th.	6. 1. 22. 2	12. 5. 1, 0	0. 32. 40	8. 5, 1	20, 5
25	F.	6. 2. 20. 54	12. 8. 37, 1	0. 56. 6	8. 25, 6	20, 3
26	Sa.	6. 3. 19. 48	12. 12. 13, 2	1. 19. 31	8. 45, 9	20, 2
27	Sun.	6. 4. 18. 43	12. 15. 49, 6	1. 42. 56	9. 6, 1	19, 9
28	M.	6. 5. 17. 41	12. 19. 26, 2	2. 6. 21	9. 26, 0	19, 7
29	Tu.	6. 6. 16. 40	12. 23. 3, 0	2. 29. 44	9. 45, 7	19, 4
30	W.	6. 7. 15. 42	12. 26. 40, 1	2. 53. 6	10. 5, 1	

Days	Time of ☉'s Semidiam. pass ^g Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 4. 3	15. 54. 8	2. 25. 3	0. 003582	3. 27. 2
7	1. 4. 1	15. 56. 3	2. 25. 7	0. 002941	3. 26. 43
13	1. 4. 0	15. 57. 9	2. 26. 2	0. 002259	3. 26. 24
19	1. 4. 0	15. 59. 4	2. 26. 7	0. 001529	3. 26. 5
25	1. 4. 1	16. 1. 1	2. 27. 3	0. 000770	3. 25. 46

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emerfions.</i>		<i>Emerfions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
* 2	10. 7. 46	* 1	9. 55. 37	4	13. 45. 51 Im.
4	4. 37. 10	4	23. 14. 20	4	17. 19. 17 E.
5	23. 6. 40	8	12. 33. 15	11	17. 49. 27 Im.
7	17. 36. 8	12	1. 52. 13	11	21. 23. 1 E.
9	12. 5. 38	15	15. 11. 10	18	21. 53. 14 Im.
11	6. 35. 11	19	4. 30. 7	19	1. 26. 57 E.
13	1. 4. 40	22	17. 49. 3	26	1. 57. 2 Im.
14	19. 34. 14	* 26	7. 8. 1	26	5. 30. 50 E.
16	14. 3. 44	29	20. 26. 56	IV. Satellite.	
* 18	8. 33. 15			9	6. 33. 4 Im.
20	3. 2. 50			* 9	11. 8. 42 E.
21	21. 32. 21			26	0. 49. 20 Im.
23	16. 1. 57			26	5. 27. 14 E.
* 25	10. 31. 26				
27	5. 1. 1				
28	23. 30. 31				
30	17. 59. 58				

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.		Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	
MERCURY. Sup. δ 7 ^d . 19 ^h .							
1	4. 12. 27	6. 59 N	5. 2. 28	1. 46 N	12. 16 N	23. 42	
4	4. 27. 57	6. 51	5. 8. 18	1. 46	10. 7	23. 53	
7	5. 12. 2	6. 17	5. 14. 2	1. 41	7. 51	0. 0	
10	5. 24. 48	5. 28	5. 19. 38	1. 30	5. 30	0. 9	
13	6. 6. 28	4. 28	5. 25. 6	1. 17	3. 8	0. 19	
16	6. 17. 11	3. 22	6. 0. 24	1. 0	0. 46 N	0. 27	
19	6. 27. 9	2. 16	6. 5. 33	0. 42	1. 34 S	0. 34	
22	7. 6. 32	1. 9	6. 10. 33	0. 22	3. 50	0. 41	
25	7. 15. 27	0. 3 N	6. 15. 24	0. 1 N	6. 3	0. 48	
28	7. 24. 3	1. 0 S	6. 20. 8	0. 20 S	8. 12	0. 54	
30	7. 29. 39	1. 40	6. 23. 12	0. 35	9. 34	0. 58	
VENUS.							
1	4. 10. 27	2. 48 N	4. 27. 9	1. 12 N	13. 36 N	23. 18	
7	4. 20. 13	3. 5	5. 4. 35	1. 19	11. 4	23. 25	
13	4. 29. 58	3. 17	5. 12. 2	1. 23	8. 20	23. 31	
19	5. 9. 43	3. 23	5. 19. 30	1. 25	5. 28	23. 38	
25	5. 19. 28	3. 23	5. 26. 58	1. 25	2. 30	23. 43	
MARS.							
1	4. 8. 10	1. 49 N	4. 19. 46	1. 10 N	16. 1 N	22. 47	
7	4. 10. 50	1. 50	4. 23. 33	1. 11	14. 49	22. 40	
13	4. 13. 29	1. 51	4. 27. 21	1. 12	13. 33	22. 33	
19	4. 16. 8	1. 51	5. 1. 8	1. 13	12. 13	22. 26	
25	4. 18. 46	1. 51	5. 4. 55	1. 14	10. 52	22. 19	
JUPITER.							
1	10. 5. 48	0. 36 S	9. 28. 24	0. 42 S	21. 12 S	9. 19	
7	10. 6. 20	0. 36	9. 28. 3	0. 42	21. 16	8. 56	
13	10. 6. 51	0. 37	9. 27. 47	0. 42	21. 20	8. 33	
19	10. 7. 22	0. 37	9. 27. 38	0. 42	21. 21	8. 11	
25	10. 7. 54	0. 38	9. 27. 37	0. 42	21. 21	7. 50	
SATURN. $\square$ 5 ^d . 12 ^h .							
1	2. 6. 46	1. 47 S	2. 13. 9	1. 46 S	20. 39 N	18. 3	
7	2. 6. 59	1. 46	2. 13. 23	1. 47	20. 40	17. 42	
13	2. 7. 13	1. 46	2. 13. 33	1. 48	20. 40	17. 21	
19	2. 7. 26	1. 45	2. 13. 39	1. 49	20. 40	17. 1	
25	2. 7. 39	1. 45	2. 13. 41	1. 49	20. 40	16. 39	

Days of the Month.	Days of the Week.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Tu.	0. 8. 33. 16	0. 15. 48. 19	4. 50. 41 S	5. 1. 40 S
2	W.	0. 23. 4. 10	1. 0. 19. 56	5. 7. 50	5. 9. 1
3	Th.	1. 7. 34. 56	1. 14. 48. 34	5. 5. 17	4. 56. 42
4	F.	1. 22. 0. 15	1. 29. 9. 37	4. 43. 28	4. 25. 51
5	Sa.	2. 6. 16. 15	2. 13. 20. 0	4. 4. 14	3. 39. 3
6	Sun.	2. 20. 20. 38	2. 27. 18. 8	3. 10. 43	2. 39. 45
7	M.	3. 4. 12. 25	3. 11. 3. 32	2. 6. 43	1. 32. 4
8	Tu.	3. 17. 51. 30	3. 24. 36. 25	0. 56. 25 S	0. 20. 14 S
9	W.	4. 1. 18. 16	4. 7. 57. 13	0. 15. 54 N	0. 51. 33 N
10	Th.	4. 14. 33. 13	4. 21. 6. 18	1. 26. 11	1. 59. 22
11	F.	4. 27. 36. 31	5. 4. 3. 49	2. 30. 42	2. 59. 49
12	Sa.	5. 10. 28. 12	5. 16. 49. 40	3. 26. 23	3. 50. 8
13	Sun.	5. 23. 8. 10	5. 29. 23. 44	4. 10. 49	4. 28. 19
14	M.	6. 5. 36. 22	6. 11. 46. 10	4. 42. 27	4. 53. 9
15	Tu.	6. 17. 53. 12	6. 23. 57. 37	5. 0. 24	5. 4. 10
16	W.	6. 29. 59. 36	7. 5. 59. 28	5. 4. 31	5. 1. 29
17	Th.	7. 11. 57. 29	7. 17. 54. 2	4. 55. 11	4. 45. 41
18	F.	7. 23. 49. 35	7. 29. 44. 31	4. 33. 9	4. 17. 41
19	Sa.	8. 5. 39. 26	8. 11. 34. 53	3. 59. 28	3. 38. 37
20	Sun.	8. 17. 31. 28	8. 23. 29. 47	3. 15. 20	2. 49. 48
21	M.	8. 29. 30. 30	9. 5. 34. 17	2. 22. 13	1. 52. 47
22	Tu.	9. 11. 41. 48	9. 17. 53. 37	1. 21. 45	0. 49. 25 N
23	W.	9. 24. 10. 26	10. 0. 32. 46	0. 16. 3 N	0. 17. 57 S
24	Th.	10. 7. 1. 10	10. 13. 36. 1	0. 52. 15 S	1. 26. 22
25	F.	10. 20. 17. 36	10. 27. 6. 6	1. 59. 52	2. 32. 10
26	Sa.	11. 4. 1. 30	11. 11. 3. 41	3. 2. 45	3. 31. 2
27	Sun.	11. 18. 12. 12	11. 25. 26. 32	3. 56. 23	4. 18. 17
28	M.	0. 2. 45. 54	0. 10. 9. 22	4. 36. 11	4. 49. 36
29	Tu.	0. 17. 35. 53	0. 25. 4. 19	4. 58. 14	5. 1. 48
30	W.	1. 2. 33. 25	1. 10. 2. 3	5. 0. 13	4. 53. 29

T H E M O O N ' s							
Days of the Month.	Days of the Week.	Age.	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight.	Noon.	Midnight.
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
1	Tu.	19	14. 27	9. 46	16. 30	1. 3 S	1. 35 N
2	W.	20	15. 20	23. 15	30. 3	4. 12 N	6. 46
3	Th.	21	16. 14	36. 54	43. 50	9. 14	11. 34
4	F.	22	17. 8	50. 50	57. 56	13. 43	15. 40
5	Sa.	23	18. 5	65. 8	72. 24	17. 22	18. 48
6	Sun.	24	19. 3	79. 44	87. 7	19. 57	20. 47
7	M.	25	20. 0	94. 31	101. 53	21. 17	21. 28
8	Tu.	26	20. 56	109. 13	116. 28	21. 20	20. 53
9	W.	27	21. 51	123. 36	130. 37	20. 9	19. 8
10	Th.	28	22. 42	137. 28	144. 10	17. 52	16. 22
11	F.	29	23. 30	150. 42	157. 4	14. 40	12. 49
12	Sa.	1	0	163. 18	169. 24	10. 50	8. 44
13	Sun.	2	0. 16	175. 22	181. 14	6. 34	4. 20 N
14	M.	3	1. 1	187. 1	192. 44	2. 5 N	0. 10 S
15	Tu.	4	1. 44	198. 24	204. 3	2. 24 S	4. 35
16	W.	5	2. 27	209. 42	215. 21	6. 44	8. 47
17	Th.	6	3. 10	221. 3	226. 48	10. 45	12. 36
18	F.	7	3. 54	232. 36	238. 30	14. 20	15. 55
19	Sa.	8	4. 40	244. 29	250. 34	17. 20	18. 35
20	Sun.	9	5. 27	256. 46	263. 4	19. 38	20. 29
21	M.	10	6. 16	269. 28	275. 58	21. 6	21. 28
22	Tu.	11	7. 7	282. 35	289. 16	21. 35	21. 27
23	W.	12	8. 0	296. 1	302. 49	21. 2	20. 21
24	Th.	13	8. 52	309. 39	316. 30	19. 23	18. 8
25	F.	14	9. 46	323. 22	330. 13	16. 38	14. 53
26	Sa.	15	10. 39	337. 3	343. 53	12. 53	10. 41
27	Sun.	16	11. 32	350. 43	357. 32	8. 18	5. 46
28	M.	17	12. 25	4. 22	11. 14	3. 7 S	0. 25 S
29	Tu.	18	13. 18	18. 7	25. 4	2. 19 N	5. 2 N
30	W.	19	14. 13	32. 5	39. 11	7. 40	10. 11

Days of the Month.	Days of the Week.	THE M O O N ' s				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
1	Tu.	16. 18	16. 20	59. 50	59. 55	4783	4777
2	W.	16. 20	16. 20	59. 57	59. 57	4775	4775
3	Th.	16. 19	16. 18	59. 54	59. 49	4778	4784
4	F.	16. 16	16. 14	59. 43	59. 35	4792	4801
5	Sa.	16. 11	16. 8	59. 25	59. 14	4813	4827
6	Sun.	16. 5	16. 2	59. 3	58. 51	4841	4855
7	M.	15. 59	15. 55	58. 38	58. 25	4871	4887
8	Tu.	15. 51	15. 47	58. 11	57. 57	4905	4922
9	W.	15. 43	15. 39	57. 42	57. 27	4941	4960
10	Th.	15. 35	15. 31	57. 12	56. 57	4979	4998
11	F.	15. 27	15. 23	56. 42	56. 26	5017	5037
12	Sa.	15. 18	15. 14	56. 11	55. 56	5056	5076
13	Sun.	15. 11	15. 7	55. 42	55. 28	5094	5112
14	M.	15. 3	15. 0	55. 14	55. 2	5130	5146
15	Tu.	14. 57	14. 54	54. 51	54. 40	5161	5175
16	W.	14. 52	14. 50	54. 32	54. 25	5186	5195
17	Th.	14. 48	14. 47	54. 20	54. 16	5202	5207
18	F.	14. 47	14. 47	54. 15	54. 16	5209	5207
19	Sa.	14. 48	14. 50	54. 20	54. 26	5202	5194
20	Sun.	14. 52	14. 55	54. 35	54. 46	5182	5167
21	M.	14. 59	15. 3	54. 59	55. 15	5150	5129
22	Tu.	15. 8	15. 14	55. 33	55. 54	5106	5079
23	W.	15. 20	15. 27	56. 17	56. 41	5049	5018
24	Th.	15. 34	15. 41	57. 7	57. 34	4985	4951
25	F.	15. 48	15. 56	58. 1	58. 27	4917	4885
26	Sa.	16. 3	16. 10	58. 53	59. 18	4853	4822
27	Sun.	16. 16	16. 21	59. 41	60. 1	4794	4770
28	M.	16. 26	16. 30	60. 18	60. 32	4750	4733
29	Tu.	16. 32	16. 34	60. 41	60. 46	4722	4716
30	W.	16. 34	16. 34	60. 48	60. 47	4714	4715

DISTANCES of MOON's Center from SUN, and from STARS EAST of her.

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Aldebaran.	58. 7. 10	56. 18. 55	54. 30. 37	52. 42. 15	50. 53. 49	49. 5. 21	47. 16. 53	45. 28. 24
2		43. 39. 54	41. 51. 26	40. 2. 59	38. 14. 35	36. 26. 13	34. 37. 54	32. 49. 40	31. 1. 29
3		29. 13. 24	27. 25. 24	25. 37. 31	23. 49. 45	22. 2. 6			
3	Pollux.	59. 23. 19	57. 37. 14	55. 51. 21	54. 5. 39	66. 29. 11	64. 42. 30	62. 55. 58	61. 9. 34
4		45. 20. 22	43. 36. 2	41. 51. 59	40. 8. 13	52. 20. 8	50. 34. 50	48. 49. 47	47. 4. 57
5						38. 24. 45			
3	The Sun.	123. 8. 58	121. 28. 19	119. 47. 45	118. 7. 18	116. 26. 55	114. 46. 39	113. 6. 29	111. 26. 27
4		109. 46. 31	108. 6. 42	106. 27. 1	104. 47. 29	103. 8. 4	101. 28. 49	99. 49. 43	98. 10. 46
5		96. 31. 58	94. 53. 19	93. 14. 50	91. 36. 31	89. 58. 21	88. 20. 22	86. 42. 33	85. 4. 55
6		83. 27. 27	81. 50. 10	80. 13. 3	78. 36. 7	76. 59. 22	75. 22. 48	73. 46. 25	72. 10. 13
7		70. 34. 12	68. 58. 22	67. 22. 44	65. 47. 17	64. 12. 2	62. 36. 59	61. 2. 6	59. 27. 26
8		57. 52. 57	56. 18. 39	54. 44. 33	53. 10. 40	51. 36. 58	50. 3. 29	48. 30. 12	46. 57. 8
9		45. 24. 17	43. 51. 38	42. 19. 12	40. 46. 59	39. 14. 59			
14	Antares.	49. 53. 1	48. 23. 45	46. 54. 45	45. 25. 59	55. 52. 27	54. 22. 14	52. 52. 16	51. 22. 31
15		38. 6. 8	36. 38. 59	35. 12. 10	33. 45. 42	43. 57. 29	42. 29. 14	41. 1. 15	39. 33. 33
16						32. 19. 35	30. 53. 52	29. 28. 34	28. 3. 42
17		26. 39. 18							

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Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
17	α Aquilæ.	76. 12. 14	74. 55. 30	73. 38. 59	72. 22. 41	71. 6. 38	69. 50. 49	68. 35. 17	67. 20. 3
18		66. 5. 5	64. 50. 26	63. 36. 8	62. 22. 11	61. 8. 35	59. 55. 20	58. 42. 31	57. 30. 8
19		56. 18. 12	55. 6. 46	53. 55. 51	52. 45. 30	51. 35. 43			
19	Fomalhaut.	75. 49. 59	74. 25. 19	73. 0. 37	71. 35. 50	81. 28. 3	80. 3. 37	78. 39. 7	77. 14. 35
20		64. 31. 0	63. 5. 50	61. 40. 38	60. 15. 23	70. 11. 0	68. 46. 5	67. 21. 7	65. 56. 5
21		53. 8. 42				58. 50. 6	57. 24. 47	55. 59. 26	54. 34. 5
22	α Pegasi.	69. 43. 11	68. 19. 13	66. 55. 11	65. 31. 5	64. 6. 52	62. 42. 37	61. 18. 23	59. 54. 9
23		58. 29. 55	57. 5. 41	55. 41. 35	54. 17. 35	52. 53. 43	51. 30. 3	50. 6. 38	48. 43. 28
24		47. 20. 37							
24	α Arietis.	87. 58. 20	86. 23. 14	84. 47. 46	83. 11. 55	81. 35. 42	79. 59. 7	78. 22. 10	76. 44. 52
25		75. 7. 13	73. 29. 12	71. 50. 52	70. 12. 12	68. 33. 13	66. 53. 55	65. 14. 22	63. 34. 32
26		61. 54. 26	60. 14. 4	58. 33. 30	56. 52. 47	55. 11. 52	53. 30. 47	51. 49. 40	50. 8. 31
27	Aldebaran.	48. 27. 20	46. 46. 13	45. 5. 11	43. 24. 17	41. 43. 34			
27		63. 53. 49	62. 3. 38	60. 13. 15	58. 22. 40	71. 12. 0	69. 22. 51	67. 33. 26	65. 43. 46
28		49. 7. 12	47. 15. 42	45. 24. 9	43. 32. 31	56. 31. 53	54. 40. 55	52. 49. 49	50. 58. 35
29	O. 1	34. 13. 55	32. 22. 14	30. 30. 38	28. 39. 6	41. 40. 49	39. 49. 5	37. 57. 22	36. 5. 38
30		19. 23. 13				26. 47. 39	24. 56. 19	23. 5. 8	21. 14. 6
O. 1									

DISTANCES of MOON's Center from SUN, and from STARS WEST of her.

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1		39. 54. 0	41. 29. 0	43. 4. 50	44. 41. 29	46. 18. 52	47. 56. 56	49. 35. 33	51. 14. 42
2		52. 54. 21	54. 34. 21	56. 14. 39	57. 55. 17	59. 36. 13	61. 17. 20	62. 58. 37	64. 40. 4
3	Fomalhaut.	66. 21. 41	68. 3. 23	69. 45. 9	71. 26. 59	73. 8. 52	74. 50. 44	76. 32. 35	78. 14. 24
4		79. 56. 12	81. 37. 57	83. 19. 36	85. 1. 10	86. 42. 39	88. 24. 0	90. 5. 13	91. 46. 16
5		93. 27. 10							
5		34. 20. 26	35. 55. 11	37. 30. 35	39. 6. 34	40. 43. 3	42. 20. 3	43. 57. 21	45. 35. 1
6	♈ Arietis.	47. 13. 2	48. 51. 12	50. 29. 30	52. 7. 57	53. 46. 33	55. 25. 15	57. 3. 54	58. 42. 34
7		60. 21. 16							
7		27. 25. 5	29. 8. 18	30. 51. 21	32. 34. 14	34. 16. 57	35. 59. 29	37. 41. 51	39. 24. 2
8		41. 6. 2	42. 47. 52	44. 29. 31	46. 10. 59	47. 52. 16	49. 33. 21	51. 14. 15	52. 54. 59
9	♌ Adlebaran.	54. 35. 31	56. 15. 53	57. 56. 4	59. 36. 4	61. 15. 52	62. 55. 28	64. 34. 53	66. 14. 6
10		67. 53. 8	69. 31. 58	71. 10. 36	72. 49. 2	74. 27. 17	76. 5. 20	77. 43. 11	79. 20. 51
11		80. 58. 19							
16			39. 29. 21	40. 51. 3		42. 12. 40	43. 34. 12	44. 55. 39	46. 17. 1
17		47. 38. 19	48. 59. 33	50. 20. 43	51. 41. 50	53. 2. 54	54. 23. 55	55. 44. 55	57. 5. 53
18	The Sun.	58. 26. 49	59. 47. 44	61. 8. 39	62. 29. 34	63. 50. 29	65. 11. 26	66. 32. 24	67. 53. 25
19		69. 14. 28	70. 35. 34	71. 56. 44	73. 17. 59	74. 39. 18	76. 0. 42	77. 22. 13	78. 43. 50

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D.M. S.	D.M. S.	D.M. S.	D.M. S.	D.M. S.	D.M. S.	D.M. S.	D.M. S.
20	The Sun.	80. 5. 34	81. 27. 26	82. 49. 26	84. 11. 35	85. 33. 53	86. 56. 20	88. 18. 59	89. 41. 49
21		91. 4. 50	92. 28. 3	93. 51. 30	95. 15. 10	96. 39. 4	98. 3. 13	99. 27. 36	100. 52. 16
22		102. 17. 11	103. 42. 22	105. 7. 51	106. 33. 38	107. 59. 42	109. 26. 6	110. 52. 49	112. 19. 51
23		113. 47. 13	115. 14. 55	116. 42. 58	118. 11. 22	119. 40. 7			
21	Antares.	23. 37. 6	25. 2. 5	26. 27. 44	27. 54. 6	29. 21. 12	30. 48. 55	32. 17. 14	33. 46. 6
22		35. 15. 33	36. 45. 27	38. 15. 48	39. 46. 40	41. 18. 0	42. 49. 47	44. 21. 59	45. 54. 40
23		47. 27. 47	49. 1. 20	50. 35. 19	52. 9. 45	53. 44. 37	55. 19. 55	56. 55. 40	58. 31. 51
24		60. 8. 28	61. 45. 32	63. 23. 1	65. 0. 58	66. 39. 20	68. 18. 9	69. 57. 23	71. 37. 4
25		73. 17. 11	74. 57. 45	76. 38. 43	78. 20. 8	80. 1. 58	81. 44. 13	83. 26. 54	85. 9. 58
26		86. 53. 28	88. 37. 21	90. 21. 37	92. 6. 17	93. 51. 21	95. 36. 45	97. 22. 29	99. 8. 34
27		100. 55. 0	102. 41. 45	104. 28. 48	106. 16. 9	108. 3. 49			
27	α Aquila.	69. 54. 57	71. 29. 8	73. 3. 47	74. 38. 53	76. 14. 28	77. 50. 25	79. 26. 39	81. 3. 12
28		82. 40. 1	84. 17. 3	85. 54. 13	87. 31. 28	89. 8. 53			
29									
29	γ Fomalhaut.	61. 43. 16	63. 27. 56	65. 12. 46	66. 57. 45	68. 42. 53	70. 28. 7	72. 13. 21	73. 58. 35
30		75. 43. 53				54. 47. 13	56. 30. 48	58. 14. 39	59. 58. 48
O. 1									

108 SEPTEMBER 1795. XII.

CONFIGURATIONS of the SATELLITES of JUPITER

at 9 o'Clock in the Evening.

1	2 ●			⊙	3. 4	
2	1 ●		. 2	⊙		3. 4
3				⊙	1. 2	3. 4
4			1.	⊙	3. 2.	4
5			3. 2.	⊙	1	4.
6		. 3	1. 2	⊙		4.
7		. 3		⊙	1. 2	4.
8	2 ●		. 1	⊙	3. 4.	
9	1 ●		. 2 4.	⊙		3
10		4.		⊙	1. 2	3.
11		4.	1.	⊙	3. 2.	
12	4.		3. 2.	⊙	1	
13	4	3.	1. 2	⊙		
14	4	. 3		⊙	1. 2	
15		. 4	. 1	⊙	2. 3	
16		2 0 4		⊙	1.	3
17	1. 0 4. 0			⊙	. 2	3.
18			1.	⊙	3. 2. 4	
19			3. 2.	⊙	. 2	4
20		3.	. 2 1.	⊙		4
21		. 3		⊙	1. 2	4
22	3. 0		. 1	⊙	2.	4.
23		2.		⊙	1.	3 4.
24	2. 0		. 1	⊙		3 0 4
25	1 ●			⊙	4. 2 0 3	
26			2 0 3 4	⊙	. 1	
27		4. 3.	. 2 1.	⊙		
28	4.	. 3		⊙	1. 2	
29	4.		. 1 . 3	⊙	2.	
30	4	2.		⊙	1.	3

Days of the Month.	Days of the Week.	Sundays, Holidays, Terms, &c.	Phases of the MOON.	
			D. H. M.	
			<i>Last Quarter</i> -----	4. 19. 15
			<i>New Moon</i> -----	12. 10. 21
			<i>First Quarter</i> -----	20. 15. 11
			<i>Full Moon</i> -----	27. 13. 53
			Other Phenomena.	
			D. H. M.	
1	Th.	Remigius.	2. 2. 54	☾ 1 ad ☿
2	F.		3. 20	☾ 2 ad ☿
3	Sa.		3. 8. 45	☾ ☿
			23. 28	☾ ♀
4	Sun.	18th Sunday after Trinity.	4. 2. 40	☾ ♀
5	M.		19. 30	☾ ☿
6	Tu.	Faith.	5. - -	☿ ☿ diff. Lat. 5'.
7	W.		1. 41	☾ ☿
8	Th.		6. 12. 5	Im. of ☿ ☿ * 5 1/2 S. ☿
9	F.	St. Denys.	12. 50 1/2	Em. * 10 S. [Cent.
10	Sa.	Oxford & Camb. T. beg.	12. - -	☿ ☿ diff. Lat. 26'.
			15. 3. 57	☾ ☿
11	Sun.	19th Sunday after Trinity.	8. 29	☾ ☿
12	M.		13. 33	☾ ☿
13	Tu.	Transl. of K. Edw. Conf.	17. 8. 15	☾ ☿ Ophiuchi.
14	W.			☿ 1 ad ☿ diff. Lat. 41'.
15	Th.		9. 11	☾ 1 ad ♀
16	F.		19. 8. 43	☾ ☿
17	Sa.	Etheldred.	11. 14	☾ ☿
			20. 17. 23	☾ ☿
18	Sun.	20th Sunday after Trinity.	22. 7. 7	☾ ☿ ☿
19	M.	[St. Luke.	10. 20	☾ ☿ ☿
20	Tu.		19. 43	☾ ☿
21	W.		22. 34	☿ enters ♀
22	Th.		24. 2. 33	☾ 1 ad ☿
23	F.		3. 18	☾ 2 ad ☿
24	Sa.		3. 25	☾ 3 ad ☿
		[Access. Crispin.	25. - -	☿ ☿ ☿ diff. Lat. 35'.
25	Sun.	21st Su. aft. T. K. Geo. III.	27. 13. 50	☾ 2 ad ☿ Ceti.
26	M.	K. Geo. III. procl. 1760.	20. 51	☾ ☿ Ceti.
27	Tu.		29. - -	☿ ☿ ☿ diff. Lat. 56'.
28	W.	St. Simon and St. Jude.	12. 9	☾ 1 ad ☿
29	Th.		12. 33	☾ 2 ad ☿
30	F.		14. 41	☾ ☿
31	Sa.		30. 16. 57	☾ ☿
			31. 7. 11	☾ ☿
			10. 15	☾ ☿

Days of the Month.	Days of the Week.	THE S U N ' s			Equation	Diff.
		Longitude.	R ^t . Ascen.	Declin.	of Time.	
			<i>in Time.</i>	<i>South.</i>	<i>Sub.</i>	
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Th.	6. 8. 14. 46	12. 30. 17, 4	3. 16. 25	10. 24, 3	18, 8
2	F.	6. 9. 13. 52	12. 33. 55, 0	3. 39. 44	10. 43, 1	18, 5
3	Sa.	6. 10. 13. 0	12. 37. 33, 0	4. 3. 0	11. 1, 6	18, 2
4	Sun.	6. 11. 12. 11	12. 41. 11, 4	4. 26. 13	11. 19, 8	17, 8
5	M.	6. 12. 11. 24	12. 44. 50, 1	4. 49. 23	11. 37, 6	17, 4
6	Tu.	6. 13. 10. 40	12. 48. 29, 2	5. 12. 29	11. 55, 0	17, 0
7	W.	6. 14. 9. 58	12. 52. 8, 7	5. 35. 32	12. 12, 0	16, 5
8	Th.	6. 15. 9. 19	12. 55. 48, 7	5. 58. 31	12. 28, 5	16, 1
9	F.	6. 16. 8. 42	12. 59. 29, 2	6. 21. 25	12. 44, 6	15, 6
10	Sa.	6. 17. 8. 7	13. 3. 10, 1	6. 44. 14	13. 0, 2	15, 1
11	Sun.	6. 18. 7. 34	13. 6. 51, 4	7. 6. 57	13. 15, 3	14, 6
12	M.	6. 19. 7. 4	13. 10. 33, 3	7. 29. 35	13. 29, 9	14, 1
13	Tu.	6. 20. 6. 36	13. 14. 15, 8	7. 52. 7	13. 44, 0	13, 6
14	W.	6. 21. 6. 10	13. 17. 58, 7	8. 14. 33	13. 57, 6	13, 0
15	Th.	6. 22. 5. 46	13. 21. 42, 2	8. 36. 51	14. 10, 6	12, 5
16	F.	6. 23. 5. 24	13. 25. 26, 2	8. 59. 2	14. 23, 1	11, 9
17	Sa.	6. 24. 5. 3	13. 29. 10, 8	9. 21. 5	14. 35, 0	11, 4
18	Sun.	6. 25. 4. 44	13. 32. 56, 0	9. 43. 0	14. 46, 4	10, 8
19	M.	6. 26. 4. 27	13. 36. 41, 8	10. 4. 46	14. 57, 2	10, 1
20	Tu.	6. 27. 4. 12	13. 40. 28, 2	10. 26. 23	15. 7, 3	9, 5
21	W.	6. 28. 3. 58	13. 44. 15, 2	10. 47. 51	15. 16, 8	8, 9
22	Th.	6. 29. 3. 46	13. 48. 2, 9	11. 9. 9	15. 25, 7	8, 2
23	F.	7. 0. 3. 36	13. 51. 51, 2	11. 30. 17	15. 33, 9	7, 5
24	Sa.	7. 1. 3. 27	13. 55. 40, 2	11. 51. 15	15. 41, 4	6, 8
25	Sun.	7. 2. 3. 20	13. 59. 29, 9	12. 12. 2	15. 48, 2	6, 1
26	M.	7. 3. 3. 15	14. 3. 20, 3	12. 32. 37	15. 54, 3	5, 4
27	Tu.	7. 4. 3. 11	14. 7. 11, 4	12. 53. 0	15. 59, 7	4, 7
28	W.	7. 5. 3. 10	14. 11. 3, 3	13. 13. 11	16. 4, 4	3, 9
29	Th.	7. 6. 3. 11	14. 14. 56, 0	13. 33. 10	16. 8, 3	3, 1
30	F.	7. 7. 3. 13	14. 18. 49, 5	13. 52. 56	16. 11, 4	2, 3
31	Sa.	7. 8. 3. 17	14. 22. 43, 7	14. 12. 29	16. 13, 7	

Days	Time of ☉'s Semidiam. pass ^g Merid.	THE SUN'S			Place of the D's Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 4 3	16. 2, 7	2. 27, 8	0.000021	3. 25. 27
7	1. 4, 6	16. 4, 4	2. 28, 4	9.999290	3. 25. 8
13	1. 5, 0	16. 6, 0	2. 28, 9	9.998556	3. 24. 49
19	1. 5, 5	16. 7, 6	2. 29, 2	9.997806	3. 24. 30
25	1. 6, 1	16. 9, 3	2. 29, 7	9.997078	3. 24. 11

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emerfions.</i>		<i>Emerfions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	12. 29. 30	* 3	9. 45. 47	3	6. 0. 44 Im.
* 4	6. 58. 58	6	23. 4. 29	* 3	9. 34. 36 E.
6	1. 28. 27	10	12. 23. 8	10	10. 4. 6 Im.
7	19. 57. 54	14	1. 41. 45	10	13. 37. 59 E.
9	14. 27. 22	17	15. 0. 16	17	14. 7. 11 Im.
* 11	8. 56. 46	21	4. 18. 40	17	17. 41. 7 E.
13	3. 26. 9	24	17. 36. 57	24	18. 9. 48 Im.
14	21. 55. 30	* 28	6. 55. 5	24	21. 43. 47 E.
16	16. 24. 50	31	20. 13. 6	31	22. 11. 52 Im.
18	10. 54. 6				
20	5. 23. 23				
21	23. 52. 36				
23	18. 21. 48				
25	12. 50. 56				
* 27	7. 20. 4				
29	1. 49. 8				
30	20. 18. 12				
				IV. Satellite.	
				12	19. 4. 59 Im.
				13	23. 44. 47 E.
				29	13. 18. 48 Im.
				29	18. 0. 8 E.

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.		Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.		D. M.	H. M.
MERCURY. Gr. Elong. 24 ^d							
1	8. 2. 26	2. 0 S	6. 24. 44	0. 42 S	10. 14 S	1. 0	
4	8. 10. 42	2. 57	6. 29. 12	1. 3	12. 11	1. 6	
7	8. 18. 56	3. 50	7. 3. 33	1. 24	14. 2	1. 11	
10	8. 27. 14	4. 38	7. 7. 45	1. 44	15. 45	1. 16	
13	9. 5. 42	5. 21	7. 11. 49	2. 3	17. 21	1. 21	
16	9. 14. 25	5. 59	7. 15. 43	2. 20	18. 48	1. 25	
19	9. 23. 30	6. 29	7. 19. 25	2. 35	20. 5	1. 28	
22	10. 3. 4	6. 50	7. 22. 50	2. 46	21. 11	1. 31	
25	10. 13. 15	7. 0	7. 25. 55	2. 54	22. 5	1. 32	
28	10. 24. 11	6. 56	7. 28. 31	2. 56	22. 43	1. 31	
31	11. 6. 3	6. 35	8. 0. 28	2. 51	23. 3	1. 28	
VENUS. Sup. 6 15 ^d . 11 ^h 1/2.							
1	5. 29. 11	3. 17 N	6. 4. 27	1. 23 N	0. 31 S	23. 49	
7	6. 8. 53	3. 6	6. 11. 57	1. 18	3. 32	23. 55	
13	6. 18. 34	2. 49	6. 19. 28	1. 11	6. 32	0. 0	
19	6. 28. 13	2. 28	6. 26. 59	1. 2	9. 27	0. 5	
25	7. 7. 51	2. 2	7. 4. 29	0. 52	12. 13	0. 11	
MARS.							
1	4. 21. 24	1. 51 N	5. 8. 40	1. 15 N	9. 29 N	22. 12	
7	4. 24. 1	1. 50	5. 12. 26	1. 16	8. 4	22. 4	
13	4. 26. 39	1. 50	5. 16. 11	1. 16	6. 38	21. 56	
19	4. 29. 16	1. 49	5. 19. 55	1. 17	5. 11	21. 47	
25	5. 1. 53	1. 48	5. 23. 39	1. 17	3. 43	21. 38	
JUPITER. □ 21 ^d . 21 ^h .							
1	10. 8. 25	0. 39 S	9. 27. 42	0. 42 S	21. 20 S	7. 28	
7	10. 8. 56	0. 39	9. 27. 55	0. 42	21. 17	7. 8	
13	10. 9. 28	0. 40	9. 28. 15	0. 42	21. 13	6. 47	
19	10. 9. 59	0. 41	9. 28. 41	0. 42	21. 8	6. 26	
25	10. 10. 31	0. 41	9. 29. 13	0. 42	21. 1	6. 6	
SATURN.							
1	2. 7. 53	1. 45 S	2. 13. 39	1. 50 S	20. 39 N	16. 17	
7	2. 8. 6	1. 44	2. 13. 34	1. 51	20. 37	15. 55	
13	2. 8. 20	1. 44	2. 13. 24	1. 51	20. 35	15. 32	
19	2. 8. 33	1. 43	2. 13. 11	1. 52	20. 33	15. 9	
25	2. 8. 46	1. 43	2. 12. 54	1. 52	20. 31	14. 45	

		THE MOON'S							
Days of the Month.	Days of the Week.	Longitude.				Latitude.			
		Noon.		Midnight.		Noon.		Midnight.	
		S. D. M. S.	S. D. M. S.	S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Th.	1. 17. 29. 8		1. 24. 53. 36		4. 41. 47 S		4. 25. 23 S	
2	F.	2. 2. 14. 40		2. 9. 31. 39		4. 4. 42		3. 49. 11	
3	Sa.	2. 16. 44. 1		2. 23. 51. 24		3. 12. 22		2. 41. 49	
4	Sun.	3. 0. 53. 42		3. 7. 50. 50		2. 9. 9		1. 34. 56	
5	M.	3. 14. 42. 55		3. 21. 30. 6		0. 59. 46 S		0. 24. 9 S	
6	Tu.	3. 28. 12. 36		4. 4. 50. 46		0. 11. 24 N		0. 46. 23 N	
7	W.	4. 11. 24. 47		4. 17. 55. 5		1. 20. 23		1. 52. 57	
8	Th.	4. 24. 21. 52		5. 0. 45. 30		2. 23. 45		2. 52. 25	
9	F.	5. 7. 6. 10		5. 13. 24. 9		3. 18. 42		3. 42. 17	
10	Sa.	5. 19. 39. 35		5. 25. 52. 37		4. 3. 2		4. 20. 41	
11	Sun.	6. 2. 3. 23		6. 8. 12. 0		4. 35. 9		4. 46. 18	
12	M.	6. 14. 18. 31		6. 20. 23. 5		4. 54. 4		4. 58. 26	
13	Tu.	6. 26. 25. 43		7. 2. 26. 34		4. 59. 24		4. 57. 1	
14	W.	7. 8. 25. 44		7. 14. 23. 24		4. 51. 21		4. 42. 30	
15	Th.	7. 20. 19. 44		7. 26. 15. 4		4. 30. 36		4. 15. 46	
16	F.	8. 2. 9. 38		8. 8. 3. 49		3. 58. 13		3. 38. 5	
17	Sa.	8. 13. 58. 1		8. 19. 52. 43		3. 15. 35		2. 50. 55	
18	Sun.	8. 25. 48. 25		9. 1. 45. 40		2. 24. 17		1. 55. 56	
19	M.	9. 7. 45. 2		9. 13. 47. 12		1. 26. 6		0. 55. 3 N	
20	Tu.	9. 19. 52. 47		9. 26. 2. 25		0. 23. 4 N		0. 9. 33 S	
21	W.	10. 2. 16. 50		10. 8. 36. 42		0. 42. 28 S		1. 15. 20	
22	Th.	10. 15. 2. 36		10. 21. 35. 4		1. 47. 46		2. 19. 18	
23	F.	10. 28. 14. 37		11. 5. 1. 35		2. 49. 31		3. 17. 51	
24	Sa.	11. 11. 56. 11		11. 18. 58. 24		3. 43. 50		4. 6. 53	
25	Sun.	11. 26. 8. 8		0. 3. 24. 54		4. 26. 28		4. 42. 3	
26	M.	0. 10. 48. 5		0. 18. 16. 46		4. 53. 10		4. 59. 26	
27	Tu.	0. 25. 49. 54		1. 3. 26. 13		5. 0. 33		4. 56. 22	
28	W.	1. 11. 4. 19		1. 18. 42. 45		4. 46. 53		4. 32. 15	
29	Th.	1. 26. 20. 8		2. 3. 55. 7		4. 12. 48		3. 48. 56	
30	F.	2. 11. 26. 29		2. 18. 53. 15		3. 21. 12		2. 50. 17	
31	Sa.	2. 26. 14. 36		3. 3. 29. 56		2. 16. 51		1. 41. 34	

		THE MOON'S					
Days of the Month.	Days of the Week.	Age.	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight.	Noon.	Midnight.
			D. H. M.	D. M.	D. M.	D. M.	D. M.
1	Th.	20	15. 10	46. 22	53. 39	12. 33 N	14. 43 N
2	F.	21	16. 7	61. 0	68. 26	16. 38	18. 16
3	Sa.	22	17. 6	75. 55	83. 26	19. 36	20. 37
4	Sun.	23	18. 5	90. 58	98. 27	21. 18	21. 39
5	M.	24	19. 2	105. 52	113. 11	21. 39	21. 20
6	Tu.	25	19. 56	120. 22	127. 24	20. 43	19. 49
7	W.	26	20. 47	134. 16	140. 58	18. 39	17. 16
8	Th.	27	21. 36	147. 30	153. 52	15. 40	13. 54
9	F.	28	22. 22	160. 4	166. 8	11. 59	9. 57
10	Sa.	29	23. 6	172. 5	177. 57	7. 49	5. 38
11	Sun.	30	23. 49	183. 43	189. 25	3. 23 N	1. 8 N
12	M.	1	0	195. 4	200. 41	1. 8 S	3. 22 S
13	Tu.	2	0. 32	206. 10	211. 58	5. 33	7. 41
14	W.	3	1. 15	217. 38	223. 21	9. 43	11. 40
15	Th.	4	1. 58	229. 8	234. 58	13. 30	15. 11
16	F.	5	2. 43	240. 54	246. 54	16. 43	18. 5
17	Sa.	6	3. 29	253. 1	259. 13	19. 15	20. 14
18	Sun.	7	4. 17	265. 31	271. 54	20. 59	21. 31
19	M.	8	5. 7	278. 21	284. 52	21. 48	21. 50
20	Tu.	9	5. 58	291. 27	298. 4	21. 36	21. 7
21	W.	10	6. 49	304. 43	311. 23	20. 21	19. 20
22	Th.	11	7. 40	318. 4	324. 45	18. 3	16. 31
23	F.	12	8. 31	331. 25	338. 6	14. 45	12. 45
24	Sa.	13	9. 23	344. 47	351. 29	10. 32	8. 9
25	Sun.	14	10. 15	358. 13	5. 0	5. 37	2. 57 S
26	M.	15	11. 8	11. 50	18. 46	0. 13 S	2. 33 N
27	Tu.	16	12. 3	25. 46	32. 54	5. 19 N	8. 1
28	W.	17	13. 0	40. 9	47. 32	10. 37	13. 3
29	Th.	18	13. 59	55. 2	62. 40	15. 15	17. 12
30	F.	19	14. 59	70. 23	78. 10	18. 51	20. 10
31	Sa.	20	16. 0	85. 59	93. 46	21. 7	21. 43

Days of the Month.	Days of the Week.	THE M O O N ' s				Proportional	
		Semidiameter.		Hor. Parallax.		Logarithm.	
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
1	Th.	16.32	16.29	60.40	60.31	4723	4734
2	F.	16.26	16.22	60.19	60.4	4748	4766
3	Sa.	16.17	16.12	59.47	59.29	4787	4809
4	Sun.	16.7	16.2	59.10	58.50	4832	4856
5	M.	15.56	15.51	58.30	58.9	4881	4907
6	Tu.	15.45	15.40	57.49	57.29	4932	4957
7	W.	15.35	15.30	57.10	56.52	4981	5004
8	Th.	15.25	15.20	56.34	56.17	5027	5049
9	F.	15.16	15.12	56.1	55.46	5069	5089
10	Sa.	15.8	15.4	55.32	55.19	5107	5124
11	Sun.	15.1	14.58	55.7	54.56	5140	5154
12	M.	14.55	14.53	54.46	54.37	5167	5179
13	Tu.	14.51	14.49	54.29	54.22	5190	5199
14	W.	14.47	14.46	54.16	54.12	5207	5213
15	Th.	14.45	14.45	54.8	54.7	5218	5219
16	F.	14.45	14.45	54.7	54.9	5219	5217
17	Sa.	14.47	14.49	54.14	54.21	5210	5201
18	Sun.	14.51	14.54	54.29	54.40	5190	5175
19	M.	14.57	15.2	54.53	55.9	5158	5137
20	Tu.	15.7	15.12	55.27	55.47	5114	5087
21	W.	15.18	15.25	56.10	56.35	5058	5026
22	Th.	15.32	15.40	57.1	57.28	4992	4958
23	F.	15.47	15.55	57.57	58.26	4922	4886
24	Sa.	16.3	16.11	58.55	59.24	4850	4815
25	Sun.	16.18	16.25	59.51	60.16	4782	4752
26	M.	16.31	16.36	60.38	60.57	4725	4703
27	Tu.	16.40	16.43	61.11	61.21	4686	4675
28	W.	16.44	16.44	61.26	61.26	4669	4669
29	Th.	16.43	16.41	61.22	61.13	4673	4684
30	F.	16.37	16.33	61.0	60.43	4699	4719
31	Sa.	16.27	16.21	60.23	60.0	4743	4771

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
17	Fomalhaut.	79. 6. 58	77. 42. 52	76. 18. 45	74. 54. 38	73. 30. 30	72. 6. 22	70. 42. 15	69. 18. 7
18		67. 53. 59	66. 29. 50	65. 5. 41	63. 41. 33	62. 17. 26	60. 53. 19	59. 29. 13	58. 5. 9
19		56. 41. 7							
19	α Pegasi.	73. 24. 3	72. 1. 52	70. 39. 38	69. 17. 20	67. 55. 0	66. 32. 39	65. 10. 19	63. 47. 59
20		62. 25. 41	61. 3. 22	59. 41. 8	58. 19. 1	56. 56. 57	55. 35. 1	54. 13. 14	52. 51. 36
21		51. 30. 8							
21	α Arietis.	92. 36. 46	91. 5. 11	89. 33. 15	88. 0. 59	86. 28. 23	84. 55. 26	83. 22. 9	81. 48. 30
22		80. 14. 31	78. 40. 11	77. 5. 29	75. 30. 26	73. 55. 2	72. 19. 16	70. 43. 11	69. 6. 43
23		67. 29. 56	65. 52. 49	64. 15. 22	62. 37. 36	60. 59. 34	59. 21. 12	57. 42. 35	56. 3. 43
24		54. 24. 38	52. 45. 19	51. 5. 50	49. 26. 14	47. 46. 33	46. 6. 49	44. 27. 4	42. 47. 20
25		41. 7. 42							
25	Aldebaran.	70. 30. 11	68. 41. 57	66. 53. 18	65. 4. 14	63. 14. 47	61. 24. 57	59. 34. 45	57. 44. 12
26		55. 53. 20	54. 2. 7	52. 10. 35	50. 18. 44	48. 26. 38	46. 34. 16	44. 41. 39	42. 48. 47
27		40. 55. 42	39. 2. 25	37. 8. 58	35. 15. 22	33. 21. 41	31. 27. 53	29. 34. 0	27. 40. 4
28	Pollux.	25. 46. 8							
28		70. 8. 39	68. 15. 19	66. 22. 0	64. 28. 43	62. 35. 28	60. 42. 18	58. 49. 14	56. 56. 19
29		55. 3. 32	53. 10. 56	51. 18. 33	49. 26. 24	47. 34. 29	45. 42. 53	43. 51. 34	42. 0. 35
30	Regulus.	40. 9. 59							
30		75. 36. 2	73. 43. 54	71. 52. 4	70. 0. 31	68. 9. 16	66. 18. 19	64. 27. 43	62. 37. 28
31		60. 47. 33	58. 58. 0	57. 8. 49	55. 20. 2	53. 31. 35	51. 43. 33	49. 55. 55	48. 8. 41
N. 1		46. 21. 50							

DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	α Pegasi.	60. 51. 40	62. 30. 45	64. 10. 3	65. 49. 32	67. 29. 9	69. 8. 53	70. 48. 40	72. 28. 29
2		74. 8. 18	75. 48. 6	77. 27. 52	79. 7. 27	80. 46. 52			
3	α Arietis.	43. 46. 56	45. 26. 47	47. 6. 50	48. 47. 3	37. 10. 20	38. 48. 56	40. 27. 56	42. 7. 17
4		57. 8. 13	58. 48. 16	60. 28. 11	62. 7. 59	50. 27. 19	52. 7. 34	53. 47. 49	55. 28. 3
5		70. 24. 34				63. 47. 40	65. 27. 11	67. 6. 30	68. 45. 38
6		37. 58. 26	39. 40. 57	41. 23. 10	43. 5. 6	44. 46. 45	46. 28. 6	48. 9. 11	49. 49. 59
7	Aldebaran.	51. 30. 31	53. 10. 45	54. 50. 44	56. 30. 28	58. 9. 55	59. 49. 6	61. 28. 2	63. 6. 43
8		64. 45. 7	66. 23. 18	68. 1. 17	69. 38. 59	71. 16. 27	72. 53. 40	74. 30. 41	76. 7. 27
9		77. 43. 59							
10	Pollux.	34. 6. 51	35. 41. 0	37. 15. 4	38. 49. 3	40. 22. 57	41. 56. 46	43. 30. 30	45. 4. 9
		46. 37. 41	48. 11. 5	49. 44. 24	51. 17. 36	52. 59. 39	54. 23. 35	55. 56. 22	57. 29. 2
		59. 1. 33	60. 33. 57	62. 6. 13	63. 38. 20	65. 10. 21			
16		39. 14. 23	40. 34. 38	41. 54. 56	43. 15. 16	44. 35. 39	45. 56. 4	47. 16. 32	48. 37. 4
17		49. 57. 40	51. 18. 19	52. 39. 4	53. 59. 53	55. 20. 47	56. 41. 46	58. 2. 52	59. 24. 5
18	The Sun.	60. 45. 24	62. 6. 49	63. 28. 24	64. 50. 6	66. 11. 56	67. 33. 56	68. 56. 6	70. 18. 26
19		71. 49. 56	73. 3. 38	74. 26. 33	75. 49. 40	77. 12. 58	78. 36. 30	80. 0. 18	81. 24. 19
20		82. 48. 35	84. 13. 6	85. 37. 54	87. 2. 59	88. 28. 20	89. 53. 59	91. 19. 57	92. 46. 15

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
21	The Sun.	94. 12. 51	95. 39. 47	97. 7. 4	98. 34. 42	100. 2. 41	101. 31. 2	102. 59. 45	104. 28. 51
22		105. 58. 21	107. 28. 12	108. 58. 29	110. 29. 10	112. 0. 15	113. 31. 45	115. 3. 40	116. 36. 1
23		118. 8. 47	119. 41. 59	121. 15. 36					
20	Antares.	55. 26. 6	56. 59. 27	58. 33. 13	60. 7. 22	49. 16. 28	50. 48. 19	52. 20. 32	53. 53. 7
21		68. 4. 7	69. 40. 43	71. 17. 44	72. 55. 11	61. 41. 54	63. 16. 50	64. 52. 11	66. 27. 57
22		81. 9. 2	82. 49. 9	84. 29. 42	86. 10. 43	74. 33. 4	76. 11. 24	77. 50. 10	79. 29. 23
23		94. 42. 32	96. 26. 14	98. 10. 24	99. 54. 58	87. 52. 11	89. 34. 6	91. 16. 28	92. 59. 17
24		108. 44. 13				101. 39. 59	103. 25. 24	105. 11. 16	106. 57. 33
25	α Aquilæ.	64. 22. 48	65. 53. 38	67. 25. 15	68. 57. 37	70. 30. 42	72. 4. 27	73. 38. 49	75. 13. 46
26		76. 49. 15	78. 25. 16	80. 1. 43	81. 38. 35	83. 15. 50	84. 53. 26	86. 31. 20	88. 9. 29
27		89. 47. 53							
27	Fomalhaut.	55. 29. 47	57. 15. 5	59. 0. 52	60. 47. 5	62. 33. 42	64. 20. 39	66. 7. 57	67. 55. 30
28		69. 43. 18	71. 31. 17	73. 19. 24	75. 7. 38	76. 55. 59	78. 44. 20	80. 32. 43	82. 21. 5
29		84. 9. 25	85. 57. 40	87. 45. 48	89. 33. 48	91. 21. 39			
29	α Arietis.	38. 50. 19	40. 32. 59	42. 16. 7	43. 59. 36	32. 6. 7	33. 46. 0	35. 26. 44	37. 8. 12
30		52. 39. 9	54. 23. 4	56. 6. 53	57. 50. 34	45. 43. 22	47. 27. 13	49. 11. 8	50. 55. 9
31		66. 26. 8				59. 34. 6	61. 17. 30	63. 0. 38	64. 43. 31
N.I.									

2

CONFIGURATIONS of the SATELLITES of JUPITER

at 7 o'Clock in the Evening.

1		.4	.1.2	⊙	.3
2		.4		⊙ 1. .2	3.
3	1.02 ● 3 ●		.4	⊙	
4		3. .2	1. ⊙	.4	
5		.3		⊙ 1 0 2	.4
6			.3 1. ⊙	3.	.4
7		2.		⊙ 1. .1	.4
8			1 0 2 ⊙		.3 .4
9			⊙	1. .2 3.	4.
10	2 ● 3 ●		.1 ⊙		4.
11	1 ●	3. .3	⊙		4.
12		.3		⊙ 4. 1 0 2	
13		4. .3 1.	⊙	3.	
14		4. 2.	⊙	1 0 3	
15	4.		1 0 2 ⊙		.3
16	4.		⊙	1. .2 3.	
17	.4		.1 ⊙	2 0 3	
18	1 ●	.4 3. 2.	⊙		
19	2.0	3 0 4	⊙	1 0 2	
20		.3 .4 1.	⊙	3.	
21		2.	⊙	1 0 3 4	
22		2. 1.	⊙		3 0 4
23			⊙	1. .2 3.	.4
24			.1 ⊙	2 0 3	.4
25		2 0 3	⊙	1.	.4
26	1.02.0	3.	⊙		4.
27	1 ●	.3	⊙	2. 4.	
28		2.	⊙ .3 .1	4.	
29		.2 1. 4.	⊙		.3
30		4.	⊙	1. .2 3.	
31		4. .1	⊙	2. 3.	

Days of the Month.	Days of the Week.	Sundays, Holidays, Terms, &c.	Phases of the MOON.
			D. H. M.
			<i>Last Quarter</i> ----- 3. 5. 40
			<i>New Moon</i> ----- 11. 4. 11
			<i>First Quarter</i> ----- 19. 6. 44
			<i>Full Moon</i> ----- 25. 23. 42
			Other Phenomena.
			D. H. M.
1	Sun.	22d Su. aft. Tr. All Saints.	1. 2. 32 ☾ ☿ ♀
2	M.	Prince Edward born.	8. 33 ☾ ♀
3	Tu.	Prs. Soph. born. On mor.	2. 19. 53 ☾ ☿
4	W.	[of All Souls, 1 ret.	4. - - ☿ Stationary.
5	Th.	Powder-Plot, 1605.	7. - - ☿ n ^{ny} diff. Lat. 4'.
6	F.	Leon ^d . Mich. Ter. beg.	2. 49 ☾ ☿
7	Sa.	D. of Cumberland born.	14. 15. 25 ☾ 1 ad μ †
8	Sun.	23d Sunday after Trinity.	15. 15. 5 ☾ ☿ †
9	M.	[Prs. Aug. Sophia b.	17. 37 ☾ π †
10	Tu.	St. Martin.	17. 6. 46 ☾ ♄
11	W.	On. mor. of S. Mart. 2 ret.	18. 14. 49 ☾ γ ♄
12	Th.	Britius. [Cam. T. div. m.	18. 6 ☾ δ ♄
13	F.		19. 3. 47 ☾ ι ♄
14	Sa.		20. 11. 40 ☾ 1 ad ↓ ♄
15	Sun.	24th Sunday after Trinity.	12. 27 ☾ 2 ad ↓ ♄
16	M.	[Machutus.	12. 34 ☾ 3 ad ↓ ♄
17	Tu.	Hugh Bp. of Lincoln.	21. 9. 44 ☾ 33 ✕
18	W.	In 8 days of St. Mart. 3	18. 51 ☉ enters †
19	Th.	[ret.	23. - - ☿ Stationary.
20	F.	Edm. K. and Mart.	24. 1. 6 ☾ 2 ad ☿ Ceti.
21	Sa.		7. 27½ Im. of μ Ceti *6½ N. of [☿ Cent.
22	Sun.	25th Sun aft. Tr. Cecilia.	8. 29½ Em. *2½ N.
23	M.	St. Clement.	25. 23. 19 ☾ 1 ad δ ☿
24	Tu.		23. 43 ☾ 2 ad δ ☿
25	W.	D. of Glo. born. Cath. In	26. 1. 49 ☾ ε ☿
26	Th.	[15 days of St. Mart. 4 r.	27. 3. 32 ☾ ζ ☿
27	F.		17. 21 ☾ η ♀
28	Sa.	Michaelmas Term ends.	20. 20 ☾ μ ♀
29	Sun.	Advent Sunday.	28. 17. 53 ☾ δ ♀
30	M.	St. Andrew.	29. - - ☿ 0 ^{ny} diff. Lat. 28'.

Days of the Month.	Days of the Week.	THE S U N ' s			Equation of Time. <i>Sub.</i>	Diff.
		Longitude.	R ^t . Ascen. <i>in Time.</i>	Declin. <i>South.</i>		
		S. D. M. S.	H. M. S.	D. M. S.		
1	Sun.	7. 9. 3.24	14.26.38,7	14.31.48	16.15,2	0,7
2	M.	7.10. 3.33	14.30.34,6	14.50.54	16.15,9	0,1
3	Tu.	7.11. 3.44	14.34.31,3	15. 9.45	16.15,8	1,0
4	W.	7.12. 3.57	14.38.28,8	15.28.21	16.14,8	1,8
5	Th.	7.13. 4.12	14.42.27,2	15.46.42	16.13,0	2,7
6	F.	7.14. 4.30	14.46.26,4	16. 4.47	16.10,3	3,6
7	Sa.	7.15. 4.50	14.50.26,5	16.22.36	16. 6,7	4,4
8	Sun.	7.16. 5.12	14.54.27,5	16.40. 9	16. 2,3	5,3
9	M.	7.17. 5.36	14.58.29,4	16.57.25	15.57,0	6,1
10	Tu.	7.18. 6. 1	15. 2.32,1	17.14.23	15.50,9	7,0
11	W.	7.19. 6.28	15. 6.35,6	17.31. 3	15.43,9	7,8
12	Th.	7.20. 6.57	15.10.40,0	17.47.26	15.36,1	8,7
13	F.	7.21. 7.27	15.14.45,2	18. 3.30	15.27,4	9,5
14	Sa.	7.22. 7.59	15.18.51,3	18.19.15	15.17,9	10,3
15	Sun.	7.23. 8.33	15.22.58,3	18.34.41	15. 7,6	11,2
16	M.	7.24. 9. 8	15.27. 6,1	18.49.47	14.56,4	12,0
17	Tu.	7.25. 9.44	15.31.14,7	19. 4.32	14.44,4	12,8
18	W.	7.26.10.21	15.35.24,1	19.18.57	14.31,6	13,6
19	Th.	7.27.11. 0	15.39.34,3	19.33. 1	14.18,0	14,5
20	F.	7.28.11.40	15.43.45,3	19.46.44	14. 3,5	15,2
21	Sa.	7.29.12.21	15.47.57,1	20. 0. 5	13.48,3	16,0
22	Sun.	8. 0.13. 2	15.52. 9,7	20.13. 4	13.32,3	16,7
23	M.	8. 1.13.45	15.56.23,0	20.25.40	13.15,6	17,5
24	Tu.	8. 2.14.29	16. 0.37,0	20.37.53	12.58,1	18,2
25	W.	8. 3.15.14	16. 4.51,8	20.49.45	12.39,9	19,0
26	Th.	8. 4.16. 0	16. 9. 7,5	21. 1.12	12.20,9	19,7
27	F.	8. 5.16.48	16.13.23,8	21.12.15	12. 1,2	20,4
28	Sa.	8. 6.17.37	16.17.40,9	21.22.54	11.40,8	21,1
29	Sun.	8. 7.18.27	16.21.58,6	21.33. 9	11.19,7	21,8
30	M.	8. 8.19.19	16.26.17,0	21.43. 0	10.57,9	

Days	Time of ☉'s Semidiam. pass ^s Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 6, 9	16. 11, 1	2. 30, 3	9. 996287	3. 23. 49
7	1. 7, 6	16. 12, 5	2. 30, 8	9. 995667	3. 23. 30
13	1. 8, 3	16. 13, 8	2. 31, 2	9. 995079	3. 23. 10
19	1. 9, 0	16. 15, 0	2. 31, 7	9. 994519	3. 22. 51
25	1. 9, 6	16. 16, 1	2. 32, 0	9. 994020	3. 22. 32

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emerfions.</i>		<i>Emerfions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	14. 47. 16	4	9. 30. 52	1	1. 45. 50 E.
3	9. 16. 13	7	22. 48. 26	8	2. 13. 13 Im.
5	3. 45. 8	11	12. 5. 53	*8	5. 47. 8 E.
6	22. 13. 59	15	1. 23. 13	*15	6. 13. 53 Im.
8	16. 42. 47	18	14. 40. 25	15	9. 47. 45 E.
10	11. 11. 32	22	3. 57. 27	22	10. 13. 49 Im.
*12	5. 40. 14	25	17. 14. 19	22	13. 47. 37 E.
14	0. 8. 54	*29	6. 31. 2	29	14. 12. 57 Im.
15	18. 37. 32			29	17. 46. 41 E.
17	13. 6. 8			IV. Satellite.	
*19	7. 34. 41			*15	7. 29. 33 Im.
21	2. 3. 11			15	12. 12. 20 E.
22	20. 31. 39				
24	15. 0. 3				
26	9. 28. 24				
28	3. 56. 43				
29	22. 24. 58				

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.			
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	
<i>M E R C U R Y.</i>							
					Inf. ϕ	$14^d 21^h \frac{2}{3}$	
1	11. 10. 15	6. 23 S	8. 0. 56	2. 47 S	23. 5 S		1. 26
4	11. 23. 36	5. 33	8. 1. 37	2. 29	22. 57		1. 17
7	0. 8. 14	4. 18	8. 1. 2	1. 58	22. 19		1. 3
10	0. 24. 14	2. 36	7. 28. 58	1. 13	21. 8		0. 43
13	1. 11. 32	0. 32 S	7. 25. 35	0. 15 S	19. 25		0. 18
16	1. 29. 52	1. 42 N	7. 21. 34	0. 46 N	17. 26		23. 41
19	2. 18. 46	3. 49	7. 18. 3	1. 39	15. 39		23. 17
22	3. 7. 34	5. 30	7. 15. 56	2. 14	14. 29		22. 59
25	3. 25. 40	6. 34	7. 15. 33	2. 32	14. 5		22. 47
28	4. 12. 34	6. 59	7. 16. 40	2. 34	14. 22		22. 40
30	4. 23. 4	6. 57	7. 18. 5	2. 30	14. 50		22. 38
<i>V E N U S.</i>							
1	7. 19. 3	1. 29 N	7. 13. 16	0. 38 N	15. 15 S		0. 17
7	7. 28. 37	0. 57	7. 20. 48	0. 24	17. 35		0. 23
13	8. 8. 10	0. 24 N	7. 28. 20	0. 10 N	19. 39		0. 30
19	8. 17. 42	0. 10 S	8. 5. 52	0. 5 S	21. 23		0. 36
25	8. 27. 12	0. 44	8. 13. 23	0. 19	22. 44		0. 43
<i>M A R S.</i>							
1	5. 4. 57	1. 46 N	5. 27. 59	1. 18 N	1. 59 N		21. 27
7	5. 7. 34	1. 45	6. 1. 41	1. 18	0. 31 N		21. 16
13	5. 10. 12	1. 43	6. 5. 23	1. 18	0. 57 S		21. 5
19	5. 12. 49	1. 41	6. 9. 4	1. 18	2. 24		20. 54
25	5. 15. 27	1. 39	6. 12. 44	1. 18	3. 50		20. 42
<i>J U P I T E R.</i>							
1	10. 11. 7	0. 42 S	9. 29. 59	0. 41 S	20. 51 S		5. 42
7	10. 11. 39	0. 43	10. 0. 44	0. 41	20. 41		5. 21
13	10. 12. 10	0. 43	10. 1. 34	0. 41	20. 30		5. 0
19	10. 12. 42	0. 44	10. 2. 29	0. 41	20. 18		4. 39
25	10. 13. 13	0. 44	10. 3. 29	0. 41	20. 4		4. 18
<i>S A T U R N.</i>							
1	2. 9. 2	1. 42 S	2. 12. 30	1. 53 S	20. 27 N		14. 16
7	2. 9. 15	1. 42	2. 12. 7	1. 53	20. 24		13. 51
13	2. 9. 29	1. 41	2. 11. 41	1. 53	20. 21		13. 25
19	2. 9. 42	1. 41	2. 11. 13	1. 53	20. 17		12. 58
25	2. 9. 56	1. 41	2. 10. 44	1. 53	20. 13		12. 30

Days of the Month.	Days of the Week.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Sun.	3. 10. 38. 54	3. 17. 41. 19	1. 5. 9 S	0. 28. 15 S
2	M.	3. 24. 37. 11	4. 1. 26. 39	0. 8. 34 N	0. 44. 38 N
3	Tu.	4. 8. 10. 0	4. 14. 47. 32	1. 19. 34	1. 52. 57
4	W.	4. 21. 19. 42	4. 27. 46. 56	2. 24. 21	2. 53. 30
5	Th.	5. 4. 9. 42	5. 10. 28. 24	3. 20. 6	3. 43. 57
6	F.	5. 16. 43. 35	5. 22. 55. 34	4. 4. 51	4. 22. 39
7	Sa.	5. 29. 4. 48	6. 5. 11. 36	4. 37. 15	4. 48. 32
8	Sun.	6. 11. 16. 16	6. 17. 19. 5	4. 56. 28	5. 1. 3
9	M.	6. 23. 20. 20	6. 29. 20. 8	5. 2. 13	5. 0. 4
10	Tu.	7. 5. 18. 45	7. 11. 16. 18	4. 54. 34	4. 45. 53
11	W.	7. 17. 12. 58	7. 23. 8. 52	4. 34. 3	4. 19. 18
12	Th.	7. 29. 4. 14	8. 4. 59. 13	4. 1. 44	3. 41. 31
13	F.	8. 10. 54. 2	8. 16. 48. 55	3. 18. 54	2. 54. 5
14	Sa.	8. 22. 44. 11	8. 28. 40. 7	2. 27. 19	1. 58. 51
15	Sun.	9. 4. 37. 7	9. 10. 35. 37	1. 28. 56	0. 57. 54 N
16	M.	9. 16. 36. 2	9. 22. 38. 54	0. 26. 0 N	0. 6. 27 S
17	Tu.	9. 28. 44. 45	10. 4. 54. 6	0. 39. 7 S	1. 11. 41
18	W.	10. 11. 7. 37	10. 17. 25. 52	1. 43. 45	2. 15. 0
19	Th.	10. 23. 49. 26	11. 0. 18. 52	2. 45. 0	3. 13. 19
20	F.	11. 6. 54. 43	11. 13. 37. 25	3. 39. 34	4. 3. 15
21	Sa.	11. 20. 27. 14	11. 27. 24. 25	4. 23. 53	4. 41. 2
22	Sun.	0. 4. 28. 58	0. 11. 40. 45	4. 54. 14	5. 3. 2
23	M.	0. 18. 59. 21	0. 26. 24. 14	5. 7. 6	5. 6. 4
24	Tu.	1. 3. 54. 31	1. 11. 29. 12	4. 59. 49	4. 48. 17
25	W.	1. 19. 7. 4	1. 26. 46. 42	4. 31. 32	4. 9. 51
26	Th.	2. 4. 26. 45	2. 12. 5. 47	3. 43. 35	3. 13. 22
27	F.	2. 19. 42. 26	2. 27. 15. 27	2. 39. 47	2. 3. 36
28	Sa.	3. 4. 43. 43	3. 12. 6. 23	1. 25. 37	0. 46. 35 S
29	Sun.	3. 19. 22. 45	3. 26. 32. 23	0. 7. 19 S	0. 31. 31 N
30	M.	4. 3. 35. 1	4. 10. 30. 34	1. 9. 15 N	1. 45. 21

		THE MOON'S					
Days of the Month.	Days of the Week.	Age.	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight.	Noon.	Midnight.
			D. H. M.	D. M.	D. M.	D. M.	D. M.
1	Sun.	21	16. 59	101. 29	109. 6	21. 57 N	21. 49 N
2	M.	22	17. 56	116. 34	123. 52	21. 21	20. 35
3	Tu.	23	18. 49	130. 57	137. 50	19. 31	18. 12
4	W.	24	19. 38	144. 31	151. 0	16. 41	14. 58
5	Th.	25	20. 24	157. 18	163. 25	13. 6	11. 6
6	F.	26	21. 8	169. 24	175. 15	9. 0	6. 50
7	Sa.	27	21. 51	181. 0	186. 41	4. 36	2. 21 N
8	Sun.	28	22. 33	192. 18	197. 53	0. 5 N	2. 10 S
9	M.	29	23. 15	203. 28	209. 3	4. 23 S	6. 34
10	Tu.	30	23. 58	214. 40	220. 20	8. 40	10. 41
11	W.	1	0	226. 4	231. 52	12. 36	14. 23
12	Th.	2	0. 42	237. 46	243. 44	16. 2	17. 31
13	F.	3	1. 27	249. 49	255. 59	18. 49	19. 55
14	Sa.	4	2. 14	262. 14	268. 34	20. 48	21. 28
15	Sun.	5	3. 3	274. 59	281. 27	21. 54	22. 4
16	M.	6	3. 53	287. 57	294. 29	22. 0	21. 40
17	Tu.	7	4. 43	301. 1	307. 33	21. 4	20. 13
18	W.	8	5. 33	314. 5	320. 36	19. 7	17. 46
19	Th.	9	6. 22	327. 5	333. 34	16. 11	14. 23
20	F.	10	7. 11	340. 2	346. 30	12. 23	10. 12
21	Sa.	11	8. 0	352. 59	359. 30	7. 50	5. 20
22	Sun.	12	8. 50	6. 4	12. 43	2. 43 S	0. 2 S
23	M.	13	9. 42	19. 28	26. 21	2. 42 N	5. 26 N
24	Tu.	14	10. 36	33. 22	40. 34	8. 8	10. 43
25	W.	15	11. 34	47. 56	55. 28	13. 10	15. 24
26	Th.	16	12. 35	63. 11	71. 3	17. 23	19. 4
27	F.	17	13. 37	79. 1	87. 3	20. 24	21. 22
28	Sa.	18	14. 39	95. 6	103. 5	21. 57	22. 8
29	Sun.	19	15. 39	110. 58	118. 40	21. 56	21. 23
30	M.	20	16. 35	126. 11	133. 28	20. 29	19. 18

Days of the Month.	Days of the Week.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
1	Sun.	16. 14	16. 7	59. 36	59. 10	4800	4832
2	M.	16. 0	15. 53	58. 43	58. 16	4865	4898
3	T.	15. 46	15. 39	57. 50	57. 25	4931	4962
4	W.	15. 32	15. 26	57. 1	56. 38	4992	5022
5	Th.	15. 20	15. 15	56. 17	55. 57	5049	5075
6	F.	15. 10	15. 5	55. 39	55. 22	5098	5120
7	Sa.	15. 1	14. 58	55. 7	54. 54	5140	5157
8	Sun.	14. 55	14. 52	54. 43	54. 33	5171	5185
9	M.	14. 50	14. 48	54. 25	54. 18	5195	5205
10	T.	14. 46	14. 45	54. 12	54. 8	5213	5218
11	W.	14. 44	14. 44	54. 5	54. 3	5222	5225
12	Th.	14. 44	14. 44	54. 3	54. 4	5225	5223
13	F.	14. 44	14. 45	54. 6	54. 9	5221	5217
14	Sa.	14. 47	14. 49	54. 14	54. 21	5210	5201
15	Sun.	14. 51	14. 54	54. 30	54. 41	5189	5174
16	M.	14. 57	15. 1	54. 53	55. 7	5158	5140
17	Tu.	15. 5	15. 10	55. 23	55. 41	5119	5095
18	W.	15. 16	15. 22	56. 1	56. 23	5069	5041
19	Th.	15. 29	15. 36	56. 47	57. 13	5010	4977
20	F.	15. 43	15. 51	57. 40	58. 8	4943	4908
21	Sa.	15. 58	16. 6	58. 37	59. 5	4872	4838
22	Sun.	16. 14	16. 21	59. 33	60. 0	4804	4771
23	M.	16. 28	16. 34	60. 25	60. 47	4741	4715
24	Tu.	16. 39	16. 43	61. 6	61. 21	4692	4675
25	W.	16. 45	16. 47	61. 32	61. 38	4661	4654
26	Th.	16. 47	16. 46	61. 38	61. 33	4654	4660
27	F.	16. 44	16. 40	61. 23	61. 9	4672	4689
28	Sa.	16. 35	16. 29	60. 50	60. 28	4711	4737
29	Sun.	16. 22	16. 14	60. 3	59. 36	4768	4800
30	M.	16. 7	15. 59	59. 7	58. 38	4835	4871

DISTANCES of MOON'S Center from SUN, and from STARS EAST of her.

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Regulus.	46. 21. 50	44. 35. 25	42. 49. 25	41. 3. 49	39. 18. 38	37. 33. 53	35. 49. 33	34. 5. 39
2		32. 22. 11	30. 39. 9	28. 56. 33	27. 14. 24	25. 32. 42	23. 51. 26	22. 10. 38	20. 30. 17
3		18. 50. 23							
1	The Sun.	118. 24. 10	116. 45. 33	115. 7. 20	113. 29. 31	111. 52. 6	110. 15. 4	108. 38. 26	107. 2. 12
2		105. 26. 22	103. 50. 55	102. 15. 52	100. 41. 12	99. 6. 56	97. 33. 3	95. 59. 33	94. 26. 26
3		92. 53. 41	91. 21. 19	89. 49. 19	88. 17. 41	86. 46. 24	85. 15. 28	83. 44. 53	82. 14. 39
4		80. 44. 45	79. 15. 11	77. 45. 56	76. 16. 59	74. 48. 21	73. 20. 1	71. 51. 59	70. 24. 14
5		68. 56. 46	67. 29. 35	66. 2. 41	64. 36. 2	63. 9. 39	61. 43. 31	60. 17. 36	58. 51. 56
6		57. 26. 30	56. 1. 19	54. 36. 21	53. 11. 35	51. 47. 2	50. 22. 41	48. 58. 32	47. 34. 34
7		46. 10. 48	44. 47. 14	43. 23. 51	42. 0. 39	40. 37. 37			
13	α Pegasi	98. 3. 16	96. 42. 9	95. 20. 58	93. 59. 43	92. 38. 24	91. 17. 2	89. 55. 37	88. 34. 9
14		87. 12. 39	85. 51. 7	84. 29. 34	83. 7. 59	81. 46. 23	80. 24. 47	79. 3. 10	77. 41. 33
15		76. 19. 55	74. 58. 17	73. 36. 39	72. 15. 3	70. 53. 28	69. 31. 55	68. 10. 25	66. 48. 58
16		65. 27. 35	64. 6. 17	62. 45. 5	61. 23. 59	60. 3. 0	58. 42. 8	57. 21. 26	56. 0. 56
17		54. 40. 38	53. 20. 35	52. 0. 50	50. 41. 23	49. 22. 16			
17	α Arctis.	84. 4. 56	82. 33. 47	81. 2. 23	79. 30. 43	77. 58. 48	76. 36. 50	75. 6. 27	74. 35. 49
18		71. 48. 25	70. 15. 8	68. 41. 36	67. 7. 48	65. 33. 44	63. 59. 24	62. 24. 29	60. 50. 0
19									

Days	Stars Names.	Noon.	III ^a .	VI ^a .	IX ^a .	Midnight.	XV ^a .	XVIII ^a .	XXI ^a .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
20	♈ Arietis.	59. 14. 56	57. 39. 37	56. 4. 5	54. 28. 21	52. 52. 27	51. 16. 24	49. 40. 12	48. 3. 53
21		46. 27. 27							
21	Aldebaran.	76. 9. 24	74. 26. 4	72. 42. 17	70. 58. 4	69. 13. 25	67. 28. 19	65. 42. 47	63. 56. 49
22		62. 10. 25	60. 23. 34	58. 36. 18	56. 48. 37	55. 0. 30	53. 11. 58	51. 23. 2	49. 33. 43
23		47. 44. 0	45. 53. 54	44. 3. 25	42. 12. 35	40. 21. 24	38. 29. 53	36. 38. 3	34. 45. 55
24		32. 53. 31	31. 0. 49	29. 7. 53	27. 14. 45	25. 21. 25	23. 27. 55	21. 34. 17	19. 40. 32
25		17. 46. 41							
25	Pollux.	62. 11. 42	60. 18. 10	58. 24. 34	56. 30. 54	54. 37. 12	52. 43. 30	50. 49. 51	48. 56. 16
26		47. 2. 45	45. 9. 20	43. 16. 6	41. 23. 5	39. 30. 17	37. 37. 45	35. 45. 34	33. 53. 44
27		32. 2. 16							
27	Regulus.	67. 20. 5	65. 26. 21	63. 32. 51	61. 39. 36	59. 46. 36	57. 53. 53	56. 1. 28	54. 9. 22
28		52. 17. 30	50. 26. 11	48. 35. 7	46. 44. 25	44. 54. 7	43. 4. 13	41. 14. 44	39. 25. 40
29		37. 37. 2	35. 48. 51	34. 1. 7	32. 13. 52	30. 27. 5	28. 40. 48	26. 55. 1	25. 9. 44
30		23. 24. 59							
30	Spica ♀.	77. 27. 24	75. 43. 21	73. 59. 46	72. 16. 39	70. 34. 0	68. 51. 50	67. 10. 8	65. 28. 54
D. 1		63. 48. 9							
30	The Sun.	111. 59. 55							
D. 1				121. 30. 11	119. 54. 2	118. 18. 20	116. 43. 4	115. 8. 14	113. 33. 51

DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.

Day	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Aldebaran.	33. 55. 54	35. 42. 20	37. 28. 22	39. 14. 1	40. 59. 16	42. 44. 8	44. 28. 36	46. 12. 40
2		47. 56. 20	49. 39. 36	51. 22. 28	53. 4. 57	54. 47. 2	56. 28. 44	58. 10. 3	59. 50. 59
3		61. 31. 32	63. 11. 43	64. 51. 32	66. 30. 59	68. 10. 4	69. 48. 48	71. 27. 12	73. 5. 16
4		74. 42. 59							
4	Pollux.	31. 6. 38	32. 41. 35	34. 16. 24	35. 51. 4	37. 25. 36	38. 59. 59	40. 34. 12	42. 8. 15
5		43. 42. 8	45. 15. 49	46. 49. 19	48. 22. 38	49. 55. 45	51. 28. 41	53. 1. 26	54. 34. 0
6		56. 6. 24							
6	Regulus.	20. 2. 54	21. 35. 26	23. 7. 49	24. 40. 4	26. 12. 11	27. 44. 9	29. 15. 59	30. 47. 40
7		32. 19. 13	33. 50. 37	35. 21. 53	36. 53. 1	38. 24. 0	39. 54. 52	41. 25. 36	42. 56. 13
8		44. 26. 43	45. 57. 6	47. 27. 22	48. 57. 32	50. 27. 36	51. 57. 35	53. 27. 28	54. 57. 16
9		56. 26. 58	57. 56. 35	59. 26. 8	60. 55. 36	62. 24. 59			
14	The Sun.	41. 29. 52	42. 51. 30	44. 13. 16	45. 35. 10	46. 57. 13	48. 19. 25	49. 41. 47	50. 8. 22
15		52. 26. 59	53. 49. 50	55. 12. 52	56. 36. 5	57. 59. 29	59. 23. 5	60. 46. 53	61. 4. 18
16		63. 35. 7	64. 59. 34	66. 24. 15	67. 49. 10	69. 14. 20	70. 39. 46	72. 5. 28	73. 31. 26
17		74. 57. 41	76. 24. 13	77. 51. 3	79. 18. 11	80. 45. 38	82. 13. 24	83. 41. 29	85. 9. 54
18		86. 38. 40	88. 7. 47	89. 37. 15	91. 7. 5	92. 37. 17	94. 7. 52	95. 38. 50	97. 10. 12
19		98. 41. 58	100. 14. 8	101. 46. 43	103. 19. 43	104. 53. 7	106. 26. 56	108. 1. 11	109. 35. 51
20		111. 10. 57	112. 46. 29	114. 22. 27	115. 58. 51	117. 35. 41	119. 12. 57	120. 50. 39	
21									

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
19	Antares.	76. 45. 12	78. 21. 6	79. 57. 23	81. 34. 2	83. 11. 4	84. 48. 29	86. 26. 17	88. 4. 29
20		89. 43. 5	91. 22. 4	93. 1. 29	94. 41. 18	96. 21. 31	98. 2. 9	99. 43. 11	101. 24. 39
21		103. 6. 31	104. 48. 48	106. 31. 30	108. 14. 38	109. 58. 10			
21	α Aquilæ.	71. 30. 53	73. 2. 3	74. 33. 50	76. 6. 13	65. 33. 17	67. 1. 35	68. 30. 38	70. 0. 24
22		83. 56. 26	85. 31. 53	87. 7. 43	88. 43. 55	77. 39. 14	79. 12. 47	80. 46. 51	82. 21. 25
23						90. 20. 29			
23	Fomalhaut.	62. 58. 48	64. 44. 59	66. 31. 36	68. 18. 39	55. 59. 29	57. 43. 25	59. 27. 59	61. 13. 7
24		77. 19. 0	79. 7. 51	80. 56. 52	82. 46. 2	70. 6. 6	71. 53. 53	73. 41. 59	75. 30. 22
25		91. 53. 8				84. 35. 20	86. 24. 43	88. 14. 9	90. 3. 38
26	α Arietis.	32. 32. 20	34. 14. 0	35. 56. 39	37. 40. 10	39. 24. 27	41. 9. 26	42. 54. 58	44. 41. 1
27		46. 27. 25	48. 14. 3	50. 0. 51	51. 47. 49	53. 34. 52	55. 21. 56	57. 8. 59	58. 55. 56
28		60. 42. 42							
28	Aldebaran.	28. 1. 38	29. 53. 0	31. 44. 2	33. 34. 43	35. 25. 2	37. 14. 59	39. 4. 33	40. 53. 44
29		42. 42. 31	44. 30. 53	46. 18. 50	48. 6. 21	49. 53. 26	51. 40. 5	53. 26. 17	55. 12. 2
30		56. 57. 21	58. 42. 12	60. 26. 36	62. 10. 33	63. 54. 3	65. 37. 6	67. 19. 41	69. 1. 49
D. 1		70. 43. 30							

CONFIGURATIONS of the SATELLITES of JUPITER
at 6 o'Clock in the Evening.

1		4.		2.3.	⊙	1.	
2		4.		3.	1 0 2 ⊙		
3		4.		3.	⊙	2.	1 ●
4	2 ●	4.		3.	⊙ 2.		
5			4.	2.	1. ⊙	3.	
6				4.	⊙ 1 0 2	3.	
7				1.	⊙ 2.3.		
8				2.3.	⊙ 1.	4.	
9				3.	1 0 2 ⊙		4.
10				3.	⊙ 1.	2.	4.
11	1.0			3.	⊙ 2.		4.
12				2.	1. ⊙	3.	4.
13					⊙ 2.1	3.	4.
14				1.	⊙ 4.2.3		
15				2.3 0 4	⊙ 1.		
16				3 0 4	2.1 ⊙		
17				3.	⊙ 1.	2.	
18		4.		3.	1. ⊙ 2.		
19		4.		2.	⊙	3.	1 ●
20		4.			⊙ 1.	3.	2.0
21		4.		1.	⊙ 2. 3.		
22	3.0		4.	2.	⊙ 1.		
23				2.1 4	⊙		
24				3.	⊙ 1. 2.4.		
25				3. 1	⊙ 2.	4.	
26	1 ●			2.	⊙ 3.	4.	
27	2.0				⊙ 1.	3.	4.
28				1.	⊙ 2. 3.	4.	
29	2 ●				⊙ 3. 1	4.	
30				2. 1.	⊙	4.	

I. DECEMBER 1795. 133

Days of the Month.	Days of the Week.	Sundays, Holidays, Terms, &c.	Phases of the MOON.	
			D. H. M.	
			<i>Last Quarter</i>	2. 19. 39
			<i>New Moon</i>	10. 23. 17
			<i>First Quarter</i>	18. 19. 29
			<i>Full Moon</i>	25. 10. 22
			Other Phenomena.	
			D. H. M.	
1	Tu.		4 - -	♂ 4 ad ♀ = diff. Lat. 5'.
2	W.		8. 41	♂ c m
3	Th.		10 - -	♂ β m diff. Lat. 25'.
4	F.		11 - -	♂ γ m diff. Lat. 20'.
5	Sa.		14. 22. 6	♂ 4
6	Sun.	2d Sunday in Advent.	15. 20. 33	♂ γ v
7	M.	[Nicholas.	23. 54	♂ δ v
8	Tu.	Conception of V. Mary.	16. 9. 42	♂ i ad ↓
9	W.		17. 18. 16	♂ 2 ad ↓
10	Th.		19. 4	♂ 3 ad ↓
11	F.		19. 11	♂ 33 ✕
12	Sa.		18. 17. 2	♂ enters v
13	Sun.	3d Sunday in Advent.	10. 47	♂ 2 ad ♀ Ceti
14	M.	[Lucy.	18. 6	♂ μ Ceti
15	Tu.		23. 10. 17	♂ i ad δ
16	W.	O. Sap. Camb. T. ends.	10. 43½	Im. of 2 ad δ * 11 N. of
17	Th.	Oxford Term ends.	11. 42½	Em. * 7¼ N. [♂ 's Cent.
18	F.		12. 50	♂ ε δ
19	Sa.		24. 14. 47	♂ ζ δ
20	Sun.	4th Sunday in Advent.	25. 4. 35	♂ η π
21	M.	St. Thomas.	7. 34	♂ μ π
22	Tu.		26. 4. 51	♂ δ π
23	W.		30 - -	♂ λ m diff. Lat. 44'.
24	Th.		31. 15. 57	♂ c m
25	F.	Christmas-Day.		
26	Sa.	St. Stephen.		
27	Sun.	1st Sun. after Christmas.		
28	M.	Innocents. [St. John.		
29	Tu.			
30	W.			
31	Th.	Silvester.		

Days of the Month.	Days of the Week.	THE S U N ' s			Equation	Diff.
		Longitude.	R ^t . Ascen. in Time.	Declin. South.	of Time. Sub.	
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	
1	Tu.	8. 9. 20. 12	16. 30. 36, 2	21. 52. 27	10. 35, 3	23, 1
2	W.	8. 10. 21. 6	16. 34. 55, 9	22. 1. 27	10. 12, 2	23, 8
3	Th.	8. 11. 22. 2	16. 39. 16, 3	22. 10. 2	9. 48, 4	24, 4
4	F.	8. 12. 22. 59	16. 43. 37, 4	22. 18. 12	9. 24, 0	25, 0
5	Sa.	8. 13. 23. 58	16. 47. 59, 1	22. 25. 56	8. 59, 0	25, 6
6	Sun.	8. 14. 24. 58	16. 52. 21, 3	22. 33. 13	8. 33, 4	26, 2
7	M.	8. 15. 26. 0	16. 56. 44, 0	22. 40. 3	8. 7, 2	26, 6
8	Tu.	8. 16. 27. 2	17. 1. 7, 2	22. 46. 27	7. 40, 6	27, 1
9	W.	8. 17. 28. 6	17. 5. 39, 9	22. 52. 24	7. 13, 5	27, 5
10	Th.	8. 18. 29. 10	17. 9. 55, 0	22. 57. 54	6. 46, 0	27, 9
11	F.	8. 19. 30. 15	17. 14. 19, 5	23. 2. 57	6. 18, 1	28, 3
12	Sa.	8. 20. 31. 21	17. 18. 44, 5	23. 7. 32	5. 49, 8	28, 6
13	Sun.	8. 21. 32. 28	17. 23. 9, 8	23. 11. 40	5. 21, 2	29, 0
14	M.	8. 22. 33. 35	17. 27. 35, 4	23. 15. 20	4. 52, 2	29, 2
15	Tu.	8. 23. 34. 43	17. 32. 1, 3	23. 18. 32	4. 23, 0	29, 4
16	W.	8. 24. 35. 51	17. 36. 27, 3	23. 21. 15	3. 53, 6	29, 5
17	Th.	8. 25. 36. 59	17. 40. 53, 5	23. 23. 31	3. 24, 1	29, 7
18	F.	8. 26. 38. 7	17. 45. 19, 8	23. 25. 19	2. 54, 4	29, 9
19	Sa.	8. 27. 39. 16	17. 49. 46, 3	23. 26. 38	2. 24, 5	29, 9
20	Sun.	8. 28. 40. 24	17. 54. 12, 9	23. 27. 29	1. 54, 6	30, 0
21	M.	8. 29. 41. 33	17. 58. 39, 5	23. 27. 52	1. 24, 6	30, 0
22	Tu.	9. 0. 42. 41	18. 3. 6, 2	23. 27. 46	0. 54, 6	30, 0
23	W.	9. 1. 43. 50	18. 7. 32, 8	23. 27. 12	0. 24, 6	30, 0
24	Th.	9. 2. 44. 59	18. 11. 59, 3	23. 26. 10	Add. 3, 4	29, 8
25	F.	9. 3. 46. 8	18. 16. 25, 8	23. 24. 39	0. 35, 2	29, 8
26	Sa.	9. 4. 47. 17	18. 20. 52, 2	23. 22. 41	1. 5, 9	29, 6
27	Sun.	9. 5. 48. 27	18. 25. 18, 5	23. 20. 14	1. 34, 6	29, 4
28	M.	9. 6. 49. 36	18. 29. 44, 6	23. 17. 19	2. 4, 0	29, 2
29	Tu.	9. 7. 50. 46	18. 34. 10, 5	23. 13. 56	2. 33, 2	29, 0
30	W.	9. 8. 51. 56	18. 38. 36, 1	23. 10. 5	3. 2, 2	28, 9
31	Th.	9. 9. 53. 7	18. 43. 1, 6	23. 5. 46	3. 31, 1	

Days	Time of ☉'s Semidiam. pass ^t Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 10. 2	16. 17. 1	2. 32. 2	9. 993609	3. 22. 13
7	1. 10. 7	16. 17. 9	2. 32. 5	9. 993282	3. 21. 54
13	1. 11. 0	16. 18. 5	2. 32. 7	9. 993010	3. 21. 35
19	1. 11. 1	16. 19. 0	2. 32. 8	9. 992799	3. 21. 16
25	1. 11. 2	16. 19. 2	2. 32. 9	9. 992667	3. 20. 57

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emerfions.</i>		<i>Emerfions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	16. 53. 12	2	19. 47. 38	6	18. 11. 30 Im.
3	11. 21. 23	6	9. 4. 8	6	21. 45. 9 E.
* 5	5. 49. 33	9	22. 20. 31	13	22. 9. 36 Im.
7	0. 17. 40	13	11. 36. 48	14	1. 43. 6 E.
8	18. 45. 48	17	0. 53. 3	21	2. 7. 27 Im.
10	13. 13. 52	20	14. 9. 17	* 21	5. 40. 49 E.
12	7. 41. 55	24	3. 25. 33	28	6. 5. 12 Im.
14	2. 9. 55	27	16. 41. 51	28	9. 38. 25 E.
15	20. 37. 55	31	5. 58. 12		
17	15. 5. 54				
19	9. 33. 53				
21	4. 1. 51				
22	22. 29. 48				
24	16. 57. 44				
26	11. 25. 41				
28	5. 53. 38				
30	0. 21. 35				
31	18. 49. 33				
IV. Satellite.					
				2	1. 36. 45 Im.
				* 2	6. 20. 41 E.
				18	19. 41. 7 Im.
				19	0. 26. 0 E.

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.		Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.		D. M.	H. M.
MERCURY. Gr. Elong. 2 ^d .							
1	4.28.4	6.51 N	7.18.56	2.27 N	15.7 S	22.38	
4	5.12.9	6.17	7.22.1	2.12	16.10	22.38	
7	5.24.55	5.27	7.25.36	1.53	17.21	22.39	
10	6.6.34	4.27	7.29.32	1.32	18.35	22.42	
13	6.17.17	3.22	8.3.42	1.9	19.47	22.46	
16	6.27.15	2.15	8.8.0	0.46	20.54	22.51	
19	7.6.38	1.8	8.12.24	0.23	21.55	22.56	
22	7.15.34	0.3 N	8.16.53	0.1 N	22.48	23.2	
25	7.24.10	1.0 S	8.21.25	0.20 S	23.32	23.8	
28	8.2.33	2.1	8.26.0	0.40	24.4	23.15	
31	8.10.49	2.57	9.0.38	0.58	24.25	23.22	
VENUS.							
1	9.6.42	1.16 S	8.20.55	0.33 S	23.42 S	0.50	
7	9.16.11	1.46	8.28.27	0.47	24.14	0.56	
13	9.25.40	2.13	9.5.58	0.59	24.19	1.3	
19	10.5.9	2.37	9.13.30	1.10	23.57	1.9	
25	10.14.39	2.56	9.21.1	1.20	23.8	1.15	
MARS.							
1	5.18.5	1.36 N	6.16.23	1.18 N	5.15 S	20.30	
7	5.20.44	1.34	6.20.2	1.17	6.39	20.17	
13	5.23.23	1.31	6.23.39	1.17	8.0	20.4	
19	5.26.3	1.28	6.27.15	1.16	9.18	19.51	
25	5.28.43	1.24	7.0.49	1.15	10.36	19.38	
JUPITER.							
1	10.13.46	0.45 S	10.4.33	0.41 S	19.48 S	3.57	
7	10.14.17	0.45	10.5.41	0.41	19.32	3.36	
13	10.14.49	0.46	10.6.51	0.41	19.15	3.14	
19	10.15.21	0.47	10.8.5	0.41	18.56	2.53	
25	10.15.53	0.47	10.9.23	0.41	18.35	2.31	
SATURN. 8 ^d . 20 ^h .							
1	2.10.9	1.40 S	2.10.15	1.52 S	20.10 N	12.2	
7	2.10.22	1.40	2.9.45	1.51	20.6	11.34	
13	2.10.36	1.39	2.9.16	1.51	20.2	11.6	
19	2.10.49	1.39	2.8.48	1.50	19.58	10.38	
25	2.11.3	1.39	2.8.22	1.49	19.55	10.9	

		THE MOON'S							
Days of the Month.	Days of the Week.	Longitude.				Latitude.			
		Noon.		Midnight.		Noon.		Midnight.	
		S.	D. M. S.	S.	D. M. S.	D. M. S.		D. M. S.	
1	Tu.	4.	17. 19. 8	4.	24. 0. 57	2.	19. 21 N	2.	50. 52 N
2	W.	5.	0. 36. 21	5.	7. 5. 43	3.	19. 35	3.	45. 18
3	Th.	5.	13. 29. 35	5.	19. 48. 26	4.	7. 47	4.	26. 55
4	F.	5.	26. 2. 46	6.	2. 13. 10	4.	42. 42	4.	54. 57
5	Sa.	6.	8. 20. 7	6.	14. 24. 9	5.	3. 45	5.	9. 3
6	Sun.	6.	20. 25. 43	6.	26. 25. 18	5.	10. 53	5.	9. 17
7	M.	7.	2. 23. 17	7.	8. 20. 6	5.	4. 21	4.	56. 7
8	Tu.	7.	14. 16. 3	7.	20. 11. 28	4.	44. 43	4.	30. 16
9	W.	7.	26. 6. 38	8.	2. 1. 49	4.	12. 55	3.	52. 49
10	Th.	8.	7. 57. 14	8.	13. 53. 8	3.	30. 10	3.	5. 12
11	F.	8.	19. 49. 42	8.	25. 47. 8	2.	38. 8	2.	9. 14
12	Sa.	9.	1. 45. 40	9.	7. 45. 31	1.	38. 47	1.	7. 7
13	Sun.	9.	13. 46. 54	9.	19. 50. 7	0.	34. 30 N	0.	1. 19 N
14	M.	9.	25. 55. 22	10.	2. 3. 3	0.	32. 7 S	1.	5. 25 S
15	Tu.	10.	8. 13. 26	10.	14. 26. 57	1.	38. 13	2.	10. 9
16	W.	10.	20. 43. 57	10.	27. 4. 50	2.	40. 49	3.	9. 50
17	Th.	11.	3. 30. 1	11.	9. 59. 54	3.	36. 49	4.	1. 20
18	F.	11.	16. 34. 53	11.	23. 15. 15	4.	23. 0	4.	41. 26
19	Sa.	0.	0. 1. 20	0.	6. 53. 21	4.	56. 14	5.	7. 2
20	Sun.	0.	13. 51. 23	0.	20. 55. 23	5.	13. 32	5.	15. 23
21	M.	0.	28. 5. 13	1.	5. 20. 34	5.	12. 25	5.	4. 27
22	Tu.	1.	12. 40. 58	1.	20. 5. 44	4.	51. 25	4.	33. 26
23	W.	1.	27. 34. 8	2.	5. 5. 7	4.	10. 37	3.	43. 21
24	Th.	2.	12. 37. 44	2.	20. 10. 45	3.	12. 8	2.	37. 29
25	F.	2.	27. 43. 4	3.	5. 13. 26	2.	0. 6	1.	20. 45 S
26	Sa.	3.	12. 40. 49	3.	20. 4. 11	0.	40. 16 S	0.	0. 35 N
27	Sun.	3.	27. 22. 42	4.	4. 35. 36	0.	41. 0 N	1.	28. 14
28	M.	4.	11. 42. 24	4.	18. 42. 40	1.	57. 42	2.	32. 47
29	Tu.	4.	25. 36. 15	5.	2. 23. 5	3.	5. 5	3.	34. 14
30	W.	5.	9. 3. 18	5.	15. 37. 4	3.	59. 57	4.	22. 6
31	Th.	5.	22. 4. 47	5.	28. 26. 47	4.	40. 32	4.	55. 12

		THE M O O N ' s					
Days of the Month.	Days of the Week.	Age.	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight.	Noon.	Midnight.
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
1	Tu.	21	17. 27	140. 30	147. 19	17. 52 N	16. 13 N
2	W.	22	18. 15	153. 53	160. 14	14. 23	12. 24
3	Th.	23	19. 0	166. 24	172. 24	10. 18	8. 8
4	F.	24	19. 43	178. 15	184. 0	5. 54	3. 37 N
5	Sa.	25	20. 24	189. 39	195. 15	1. 20 N	0. 56 S
6	Sun.	26	21. 6	200. 49	206. 22	3. 11 S	5. 24
7	M.	27	21. 48	211. 57	217. 34	7. 33	9. 37
8	Tu.	28	22. 31	223. 14	228. 59	11. 36	13. 28
9	W.	29	23. 15	234. 49	240. 44	15. 12	16. 47
10	Th.	1	0	246. 46	252. 54	18. 12	19. 26
11	F.	2	0. 2	259. 9	265. 29	20. 27	21. 15
12	Sa.	3	0. 51	271. 54	278. 23	21. 48	22. 7
13	Sun.	4	1. 40	284. 55	291. 28	22. 10	21. 58
14	M.	5	2. 29	298. 1	304. 34	21. 30	20. 47
15	Tu.	6	3. 18	311. 6	317. 35	19. 48	18. 35
16	W.	7	4. 7	324. 1	330. 25	17. 8	15. 28
17	Th.	8	4. 55	336. 46	343. 5	13. 36	11. 33
18	F.	9	5. 43	349. 23	355. 40	9. 20	6. 59
19	Sa.	10	6. 31	1. 59	8. 21	4. 31 S	1. 58 S
20	Sun.	11	7. 19	14. 47	21. 18	0. 40 N	3. 18 N
21	M.	12	8. 10	27. 57	34. 45	5. 56	8. 32
22	Tu.	13	9. 4	41. 44	48. 54	11. 2	13. 24
23	W.	14	10. 1	56. 16	63. 50	15. 34	17. 30
24	Th.	15	11. 1	71. 36	79. 31	19. 9	20. 29
25	F.	16	12. 4	87. 33	95. 38	21. 26	22. 0
26	Sa.	17	13. 6	103. 43	111. 43	22. 11	21. 58
27	Sun.	18	14. 6	119. 35	127. 16	21. 22	20. 26
28	M.	19	15. 2	134. 44	141. 58	19. 10	17. 39
29	Tu.	20	15. 54	148. 57	155. 41	15. 54	13. 58
30	W.	21	16. 42	162. 11	168. 29	11. 53	9. 42
31	Th.	22	17. 27	174. 35	180. 32	7. 26	5. 7

Days of the Month.	Days of the Week.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
1	Tu.	15. 51	15. 43	58. 9	57. 40	4907	4943
2	W.	15. 35	15. 28	57. 12	56. 45	4979	5013
3	Th.	15. 21	15. 15	56. 20	55. 57	5045	5075
4	F.	15. 9	15. 4	55. 37	55. 18	5100	5125
5	Sa.	15. 0	14. 55	55. 1	54. 46	5148	5167
6	Sun.	14. 52	14. 50	54. 34	54. 25	5183	5195
7	M.	14. 48	14. 46	54. 18	54. 12	5205	5213
8	Tu.	14. 45	14. 44	54. 7	54. 5	5219	5222
9	W.	14. 44	14. 44	54. 4	54. 5	5223	5222
10	Th.	14. 45	14. 46	54. 7	54. 10	5219	5215
11	F.	14. 47	14. 49	54. 15	54. 21	5209	5201
12	Sa.	14. 51	14. 53	54. 28	54. 36	5191	5181
13	Sun.	14. 55	14. 58	54. 45	54. 56	5169	5154
14	M.	15. 1	15. 5	55. 7	55. 20	5140	5123
15	Tu.	15. 9	15. 13	55. 35	55. 51	5103	5082
16	W.	15. 18	15. 23	56. 8	56. 26	5060	5037
17	Th.	15. 28	15. 34	56. 46	57. 7	5012	4985
18	F.	15. 40	15. 46	57. 28	57. 51	4958	4930
19	Sa.	15. 52	15. 59	58. 15	58. 40	4900	4869
20	Sun.	16. 6	16. 12	59. 4	59. 28	4839	4810
21	M.	16. 18	16. 24	59. 50	60. 11	4783	4758
22	Tu.	16. 29	16. 34	60. 30	60. 46	4735	4716
23	W.	16. 37	16. 40	60. 59	61. 8	4700	4690
24	Th.	16. 41	16. 41	61. 13	61. 13	4684	4684
25	F.	16. 40	16. 38	61. 9	61. 1	4689	4698
26	Sa.	16. 34	16. 29	60. 48	60. 31	4714	4734
27	Sun.	16. 24	16. 17	60. 10	59. 46	4759	4788
28	M.	16. 10	16. 3	59. 20	58. 53	4820	4853
29	Tu.	15. 55	15. 47	58. 24	57. 55	4889	4924
30	W.	15. 39	15. 32	57. 27	56. 59	4960	4995
31	Th.	15. 25	15. 18	56. 33	56. 8	5028	5060

DISTANCES of MOON's Center from SUN, and from STARS EAST of her.

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Spica ν	63. 48. 9	62. 7. 52	60. 28. 1	58. 48. 39	57. 9. 43	55. 31. 16	53. 53. 17	52. 15. 45
2		50. 38. 41	49. 2. 4	47. 25. 55	45. 50. 13	44. 14. 58	42. 40. 10	41. 5. 49	39. 31. 55
3		37. 58. 28							
1	The Sun.	111. 59. 55	110. 26. 26	108. 53. 22	107. 20. 43	105. 48. 30	104. 16. 42	102. 45. 18	101. 14. 19
2		99. 43. 45	98. 13. 35	96. 43. 48	95. 14. 24	93. 45. 22	92. 16. 42	90. 48. 23	89. 20. 25
3		87. 52. 47	86. 25. 29	84. 58. 30	83. 31. 51	82. 5. 30	80. 39. 28	79. 13. 42	77. 48. 14
4		76. 23. 2	74. 58. 6	73. 33. 24	72. 8. 57	70. 44. 45	69. 20. 46	67. 57. 0	66. 33. 26
5		65. 10. 5	63. 46. 55	62. 23. 56	61. 1. 8	59. 38. 30	58. 16. 1	56. 53. 41	55. 31. 30
6		54. 9. 27	52. 47. 32	51. 25. 44	50. 4. 3	48. 42. 28	47. 20. 59	45. 59. 36	44. 38. 18
7		43. 17. 6	41. 55. 58	40. 34. 54	39. 13. 53	37. 52. 56			
12	α Pegasi.	68. 2. 23	66. 40. 39	65. 19. 1	63. 57. 31	73. 29. 56	72. 8. 0	70. 46. 6	69. 24. 14
13		57. 12. 18	55. 51. 53	54. 31. 45	53. 11. 56	62. 36. 8	61. 14. 53	59. 53. 49	58. 32. 57
14						51. 52. 24			
14	α Arietis.	86. 55. 18	85. 25. 8	83. 54. 47	82. 24. 17	92. 54. 18	91. 24. 48	89. 55. 8	88. 25. 18
15		74. 49. 16	73. 17. 46	71. 46. 7	70. 14. 18	80. 53. 37	79. 22. 46	77. 51. 46	76. 20. 36
16		62. 32. 52	61. 0. 8	59. 27. 17	57. 54. 20	68. 42. 19	67. 10. 10	65. 37. 53	64. 5. 27
17		50. 8. 4	48. 34. 41	47. 1. 17	45. 27. 56	56. 21. 15	54. 48. 3	53. 14. 47	51. 41. 27
18						43. 54. 37			

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
18									
19		66. 36. 24	64. 54. 22	63. 11. 58	61. 29. 13	73. 21. 4	71. 40. 25	69. 59. 25	68. 18. 5
20	Aldebaran.	52. 50. 3	51. 5. 8	49. 19. 51	47. 34. 13	59. 46. 7	58. 2. 38	56. 18. 48	54. 34. 36
21		38. 40. 42	36. 52. 57	35. 4. 52	33. 16. 28	45. 48. 13	44. 1. 52	42. 15. 9	40. 28. 6
22		24. 9. 52				31. 27. 43	29. 38. 41	27. 49. 22	25. 59. 46
22		68. 34. 34	66. 44. 58	64. 55. 5	63. 4. 57	61. 14. 34	59. 23. 58	57. 33. 10	55. 42. 12
23	Pollux.	53. 51. 5	51. 59. 50	50. 8. 27	48. 17. 0	46. 25. 28	44. 33. 55	42. 42. 20	40. 50. 45
24		38. 59. 12							
24		74. 25. 11	72. 31. 54	70. 38. 36	68. 45. 17	66. 51. 57	64. 58. 39	63. 5. 25	61. 12. 14
25		59. 19. 7	57. 26. 7	55. 33. 16	53. 40. 33	51. 47. 59	49. 55. 35	48. 3. 25	46. 11. 28
26	Regulus.	44. 19. 44	42. 28. 18	40. 37. 9	38. 46. 17	36. 55. 43	35. 5. 29	33. 15. 37	31. 26. 8
27		29. 37. 2	27. 48. 21	26. 0. 6	24. 12. 19	22. 25. 0			
27						76. 27. 34	74. 40. 48	72. 54. 29	71. 8. 35
28		69. 23. 8	67. 38. 8	65. 53. 35	64. 9. 29	62. 25. 52	60. 42. 43	59. 0. 3	57. 17. 51
29		55. 36. 9	53. 54. 56	52. 14. 13	50. 34. 1	48. 54. 18	47. 15. 5	45. 36. 24	43. 58. 14
30	Spica ♀	42. 20. 35	40. 43. 28	39. 6. 53	37. 30. 52	35. 55. 24	34. 20. 28	32. 46. 9	31. 12. 28
31		29. 39. 25	28. 6. 56	26. 35. 13	25. 4. 22	23. 34. 24	22. 5. 22	20. 37. 27	19. 10. 38
J. 1		17. 44. 59							
30		119. 43. 51	118. 12. 33	116. 41. 39	115. 11. 10	113. 41. 5	112. 11. 24	110. 42. 6	109. 13. 11
31	The Sun.	107. 44. 39	106. 16. 30	104. 48. 43	103. 21. 18	101. 54. 14	100. 27. 30	99. 1. 6	97. 35. 2
J. 1		96. 9. 17							

DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Pollux.	27. 10. 12	28. 48. 23	30. 26. 25	32. 4. 17	33. 41. 57	35. 19. 24	36. 56. 36	38. 33. 34
2		40. 10. 17	41. 46. 42	43. 22. 48	44. 58. 37	46. 34. 9	48. 9. 23	49. 44. 19	51. 18. 57
3		52. 53. 16							
3		16. 53. 17	18. 27. 18	20. 1. 7	21. 34. 43	23. 8. 7	24. 41. 18	26. 14. 16	27. 47. 1
4		29. 19. 34	30. 51. 53	32. 23. 59	33. 55. 52	35. 27. 32	36. 58. 59	38. 30. 15	40. 1. 20
5	Regulus.	41. 32. 13	43. 2. 56	44. 33. 28	46. 3. 51	47. 34. 4	49. 4. 8	50. 34. 4	52. 3. 52
6		53. 33. 32	55. 3. 5	56. 32. 32	58. 1. 53	59. 31. 7	61. 0. 16	62. 29. 20	63. 58. 19
7		65. 27. 14	66. 56. 5	68. 24. 53	69. 53. 38	71. 22. 21			
7						18. 40. 51	20. 3. 8	21. 26. 4	22. 49. 36
8	Spica μ	24. 13. 40	25. 38. 13	27. 3. 12	28. 28. 34	29. 54. 15	31. 20. 8	32. 46. 13	34. 12. 32
9		35. 39. 3	37. 5. 42	38. 32. 31	39. 59. 28	41. 26. 34			
14									
15		44. 40. 8	46. 5. 43	47. 31. 31	48. 57. 31	50. 23. 43	51. 50. 7	53. 16. 44	54. 43. 34
16		56. 10. 38	57. 37. 55	59. 5. 26	60. 33. 12	62. 1. 12	63. 29. 27	64. 57. 58	66. 26. 45
17		67. 55. 48	69. 25. 7	70. 54. 44	72. 24. 37	73. 54. 48	75. 25. 17	76. 56. 4	78. 27. 9
18	The Sun.	79. 58. 33	81. 30. 15	83. 2. 17	84. 34. 39	86. 7. 20	87. 40. 22	89. 13. 44	90. 47. 27
19		92. 21. 31	93. 55. 57	95. 30. 45	97. 5. 54	98. 41. 25	100. 17. 17	101. 53. 32	103. 30. 8

Days	Stars Names.	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
20	The Sun.	105. 7. 6	106. 44. 26	108. 22. 8	110. 0. 12	111. 38. 38	113. 17. 26	114. 56. 36	116. 36. 7
21		118. 16. 0	119. 56. 14	121. 36. 48					
18	♈ Aquilæ.	67. 50. 23	69. 16. 32	70. 43. 17	72. 10. 40	62. 12. 38	63. 36. 0	65. 0. 6	66. 24. 54
19		79. 35. 54	81. 6. 27	82. 37. 25	84. 8. 48	73. 38. 38	75. 7. 10	76. 36. 14	78. 5. 49
20						85. 40. 35			
20	Fomalhaut.	57. 30. 28	59. 11. 18	60. 52. 43	62. 34. 42	50. 53. 27	52. 31. 42	54. 10. 38	55. 50. 14
21		71. 11. 58	72. 56. 43	74. 41. 51	76. 27. 20	64. 17. 12	66. 0. 12	67. 43. 41	69. 27. 37
22		85. 19. 21	87. 6. 30	88. 53. 49	90. 41. 18	78. 13. 9	79. 59. 17	81. 45. 43	83. 32. 25
23						92. 28. 55			
23	♈ Arctis.	39. 54. 3	41. 38. 6	43. 22. 46	45. 8. 3	33. 7. 0	34. 47. 14	36. 28. 33	38. 10. 51
24		54. 0. 50	55. 48. 12	57. 35. 39	59. 23. 11	46. 53. 57	48. 40. 11	50. 26. 46	52. 13. 40
25						61. 10. 44			
25	Aldebaran.	36. 0. 0	37. 51. 32	39. 42. 51	41. 33. 52	28. 31. 43	30. 24. 4	32. 16. 15	34. 8. 14
26		50. 44. 34	52. 33. 42	54. 22. 27	56. 10. 50	43. 24. 39	45. 15. 7	47. 5. 15	48. 55. 4
27		65. 6. 47	66. 52. 43	68. 38. 14	70. 23. 18	57. 58. 50	59. 46. 26	61. 33. 38	63. 20. 25
28		79. 2. 3				72. 7. 57	73. 52. 9	75. 35. 54	77. 19. 12
29									
29	Pollux.	35. 14. 21	36. 54. 51	38. 35. 3	40. 14. 56	41. 54. 30	43. 33. 44	45. 12. 37	46. 51. 10
30		48. 29. 22	50. 7. 11	51. 44. 37	53. 21. 42	54. 58. 26	56. 34. 48	58. 10. 49	59. 46. 30
31		61. 21. 49	62. 56. 47	64. 31. 24	66. 5. 42	67. 39. 40	69. 13. 18	70. 46. 38	72. 19. 39
J. 1		73. 52. 21							

CONFIGURATIONS of the SATELLITES of JUPITER
at 5 o'Clock in the Evening.

1		3.	⊙	² 104	
2	4●	3.	⊙	2.	
3		4.	⊙	³ 1.	
4		4.	⊙	3.	1.0
5	4.		⊙	3.	
6	4.		⊙	3.	2●
7	4.	3.	⊙		
8	4.	3.	⊙	2.1	
9		3.4.	⊙	2.	
10	3.0 4.0	2.	⊙	1.	
11		2.1	⊙	4.3	
12	1●		⊙	3.	4.
13			⊙	3.	4.
14		2. 3 1.	⊙		4.
15	2.0	3.	⊙	1.	4.
16		3.	⊙	2.	4.
17		2.3	⊙	1.	4.
18		2.1	⊙	4.	3.
19		4.	⊙	1.	3.
20	1.0	4.	⊙	2.	3.
21		4.	⊙	1.	3●
22	4.	3.	⊙	1.	2.0
23	4.	3.	⊙	2.	
24	4.	3.	⊙	1.	
25	4.	2.1	⊙	3.	
26		4.	⊙	1.	3.
27			⊙	4.	3.
28	1●3●	2.	⊙	4.	
29		3.	⊙	1.	4.
30		3.	⊙	2.	4.
31	2●	3.	⊙	1.	4.

GEORGIAN PLANET.

1795.

Days	Heliocentric		Geocentric		Declin.	Passage Merid.
	Long.	Lat.	Long.	Lat.		
	S. D. M.	D. M.	S. D. M.	D. M.		
J A N U A R Y.						
I	5. 0. 38	0. 45 N	5. 3. 4	0. 47 N	11. 7 N	15. 30
11	5. 0. 46	0. 45	5. 2. 49	0. 47	11. 13	14. 45
21	5. 0. 54	0. 45	5. 2. 30	0. 47	11. 20	14. 1
F E B R U A R Y. 8 19 ^d . 9 ^h						
I	5. 1. 3	0. 45 N	5. 2. 4	0. 48 N	11. 29 N	13. 14
11	5. 1. 10	0. 45	5. 1. 39	0. 48	11. 39	12. 33
21	5. 1. 18	0. 45	5. 1. 13	0. 48	11. 48	11. 54
M A R C H.						
I	5. 1. 24	0. 45 N	5. 0. 52	0. 48 N	11. 55 N	11. 21
11	5. 1. 32	0. 45	5. 0. 27	0. 48	12. 4	10. 43
21	5. 1. 40	0. 45	5. 0. 4	0. 48	12. 12	10. 5
A P R I L.						
I	5. 1. 49	0. 45 N	4. 29. 42	0. 47 N	12. 19 N	9. 24
11	5. 1. 56	0. 45	4. 29. 27	0. 47	12. 25	8. 46
21	5. 2. 4	0. 45	4. 29. 16	0. 47	12. 28	8. 9
M A Y. □ 19 ^d . 21 ^h						
I	5. 2. 12	0. 45 N	4. 29. 11	0. 46 N	12. 29 N	7. 31
11	5. 2. 20	0. 45	4. 29. 11	0. 46	12. 29	6. 52
21	5. 2. 27	0. 45	4. 29. 16	0. 45	12. 27	6. 13
J U N E.						
I	5. 2. 36	0. 45 N	4. 29. 28	0. 45 N	12. 22 N	5. 29
11	5. 2. 44	0. 45	4. 29. 45	0. 45	12. 16	4. 49
21	5. 2. 52	0. 46	5. 0. 5	0. 44	12. 9	4. 9

GEORGIAN PLANET.

1795.

Days	Heliocentric		Geocentric		Declin.	Passage Merid.
	Long.	Lat.	Long.	Lat.		
	S. D. M.	D. M.	S. D. M.	D. M.		
J U L Y.						
I	5. 2. 59	0. 46 N	5. 0. 30	0. 44 N	12. 0 N	3. 29
II	5. 3. 7	0. 46	5. 0. 59	0. 44	11. 49	2. 50
21	5. 3. 15	0. 46	5. 1. 31	0. 44	11. 37	2. 12
A U G U S T. ♄ 26^d 14^h₂						
I	5. 3. 24	0. 46 N	5. 2. 9	0. 43 N	11. 24 N	1. 31
II	5. 3. 31	0. 46	5. 2. 45	0. 43	11. 11	0. 55
21	5. 3. 39	0. 46	5. 3. 22	0. 43	10. 57	0. 20
S E P T E M B E R.						
I	5. 3. 48	0. 46 N	5. 4. 4	0. 43 N	10. 42 N	23. 39
II	5. 3. 56	0. 46	5. 4. 41	0. 43	10. 28	23. 5
21	5. 4. 3	0. 46	5. 5. 18	0. 43	10. 15	22. 32
O C T O B E R.						
I	5. 4. 11	0. 46 N	5. 5. 52	0. 44 N	10. 3 N	21. 58
II	5. 4. 19	0. 46	5. 6. 24	0. 44	9. 51	21. 23
21	5. 4. 27	0. 46	5. 6. 53	0. 44	9. 41	20. 48
N O V E M B E R. ♄ 29^d 16^h₂						
I	5. 4. 35	0. 46 N	5. 7. 20	0. 45 N	9. 31 N	20. 7
II	5. 4. 43	0. 46	5. 7. 40	0. 45	9. 24	19. 28
21	5. 4. 51	0. 46	5. 7. 55	0. 45	9. 19	18. 48
D E C E M B E R.						
I	5. 4. 59	0. 46 N	5. 8. 5	0. 46 N	9. 16 N	18. 6
II	5. 5. 6	0. 46	5. 8. 9	0. 46	9. 15	17. 23
21	5. 5. 14	0. 46	5. 8. 7	0. 47	9. 16	16. 39
31	5. 5. 22	0. 46	5. 8. 0	0. 47	9. 19	15. 54

EXPLANATION and USE OF THE ARTICLES

CONTAINED IN THE

ASTRONOMICAL and NAUTICAL EPHEMERIS.

IT may be proper first to premise, that all the Calculations of the *Ephemeris* are made according to apparent Time by the Meridian of the *Royal Observatory at Greenwich*: And the Sun's, Planet's, and Moon's Places, with the Particulars depending on them in the II^d, IVth, Vth, VIth, and VIIth Pages of each Month, are computed to the Instant of apparent Noon, or that of the Sun's Center passing the Meridian of *Greenwich*.

Apparent Time, at any Place, is that deduced immediately from the Sun, whether from the Observation of his passing the Meridian, from his Altitude observed at a Distance from the Meridian, or from his observed Rising or Setting. This Time is different from that shewn by Clocks and Watches well regulated at Land, which is called equated or mean Time. This will be explained when we come to treat of the Equation of Time.

The Day is here supposed, according to the Method of Astronomers, to begin at Noon, or 12 Hours later than the civil Day of the same Denomination, and to be counted up to 24 Hours or the succeeding Noon, when the next Day begins. Thus the Day of the Month and the Hour of the Day are the same in this Method as in the civil Account at Noon, and from Noon till Midnight; but from Midnight till Noon they differ; for whereas in the civil Account a fresh Day is supposed to begin at Midnight, and the Hours to begin over again, in this Method the Day is still continued beyond Midnight, and the Reckoning of the Hours is continued up to 24. Thus the Distances put down to January 10, XV Hours belong to January 11 at Three in the Morning by Civil Reckoning.

There are XII. Pages for every Month. The first Column of the first Page of each Month contains the Day of the Week expressed concisely by the initial Letter or Letters, *Sun.* standing for Sunday, *M.* for Monday, *Tu.* for Tuesday, *W.* for Wednesday, *Th.* for Thursday, *F.* for Friday, and *Sa.* for Saturday: the second the Day

of the Month: the third Column exhibits the Sundays and Festivals of the Church of England, and other remarkable Days: The last Column shews at Top the Moon's Phases, or the Times of New and Full Moon, and of the first and last Quarter or two Quadratures with the Sun: Beneath are contained miscellaneous Phænomena, namely, Eclipses of the Sun and Moon, and Occultations of Planets or fixt Stars not less than the fourth Magnitude, by the Moon, as they should happen at *Greenwich* by the Tables; the Conjunctions of the Moon with all Stars not less than the fourth Magnitude, which can be Occultations any where on the Globe, between the Latitudes of 60° North and 40° South: The Entrance of the Sun into the several Signs, and any other remarkable Phænomena.

The Stars are expressed by *Bayer's* Characters of Reference. The Conjunction of the Moon or a Planet with a Star is denoted by prefixing the Character of the Moon or Planet to that of the Star, the Time of the Conjunction being placed immediately before. The Case is the same with respect to the Occultation of a Star or Planet by the Moon, only this is further distinguished by the Addition of Im. or Immersion, to signify the Disappearance behind the Moon; and Em. or Emerision, to signify the Re-appearance of the same. Thus $8^d. 16^h. 22'$ $\text{D } 9 \text{ } \text{V}\text{S}$, signifies that the Moon will be in Conjunction with the Star $9 \text{ } \text{V}\text{S}$ on the Eighth Day at $16^h. 22'$, exclusive of Parallax: And $10^d. 9^h. 14'$ Im. of $\epsilon \text{ } \Pi$. $10^d. 10^h. 23'$ Em. signifies that the Moon will eclipse $\epsilon \text{ } \Pi$ on the 10th Day, the Immersion being at $9^h. 14'$, and the Emerision at $10^h. 23'$, apparent Time at *Greenwich*.

The Occultations set down are those only visible at *Greenwich*; the Circumstances of which will commonly not differ very widely in most Parts of the Kingdom; but in very distant Places they will differ very much, owing to the Change of the Moon's Parallax, or it may become no Occultation at all: The like may be said of Eclipses of the Sun.

An Eclipse of the Sun, or Occultation of a fixt Star by the Moon, if observed in a Place whose Latitude and Longitude are well determined, may be applied to the Correction of the Lunar Tables; but if made in a Place whose Latitude only is well known, may be applied to the Determination of the Longitude of the Place; but for this Purpose an accurate Calculation must be made of the Moon's Parallaxes in Longitude and Latitude, which makes this Method of settling the Longitudes of Places, though a very accurate one, less convenient in use for Persons not much versed in astronomical Calculations. However, this ought not to discourage Travellers or Mariners from endeavouring to make these Observations as often and as carefully as possible, when they shall happen to be at any Place whose Longitude they have Reason to think has not been well settled; since the necessary Calculations may be made at any Time afterwards by themselves, at Leisure, or referred to the Skill of Astronomers and Mathematicians.

Eclipses of the Moon are not liable to this Inconvenience; the Longitude of any Place, where the Eclipse has been observed, being deduced immediately by taking the Difference of the Time of the Observation and that set down in the *Ephemeris*, and converting it into Degrees, at the Rate of 15° to One Hour, &c. or more briefly by Table XIV. page 38 of the 2d Edition of the Tables requisite to be used with the *Ephemeris*. But, as the Beginning or Ending of an Eclipse of the Moon cannot be generally observed nearer than One Minute, and sometimes Two or Three Minutes of Time, the Longitudes of Places cannot be certainly determined by this Method from a single Observation of the Beginning or End nearer than a Degree. Even this Point of Exactness will often be of great Service. If both the Beginning and End of the Eclipse be observed, a greater Degree of Exactness will be attained.

The Conjunctions of the Moon with the Planets, or fixt Stars not less than the fourth Magnitude, which may prove Occultations in some inhabited Parts of the Globe, are evidently designed to instruct Mariners or Travellers to look out frequently for such Observations; which if they happen to prove Occultations, and are carefully observed, will afford a certain Means of determining the Longitude of the Place of Observation.

The Two first Columns of the Second Page of the Month contain the Day of the Week and Month as before; next follow the Sun's Longitude, right Ascension in Time, Declination, and the Equation of Time with its Difference from Day to Day.

The Longitude of the Sun is made use of in most of the succeeding Calculations of the *Ephemeris*, and may serve either to verify them, or to make other similar Calculations at a different Time of the Day. Particularly it may serve, with the Help of the Moon's Longitude, to find the Distance of the Moon from the Sun at any Time, independent of the Distances contained in the VIIIth, IXth, Xth, and XIth Pages of the Month. To find the Sun's Longitude at any Time different from Noon, Proportion must be made according to its daily Increase: Saying, as 24^h is to the Hour from Noon reckoned by the Meridian of *Greenwich*, so is the daily Variation of the Sun's Longitude, to a fourth Number; which added to the Sun's Longitude at the preceding Noon, gives the true Longitude at the given Time.

If the Time given be that of a Meridian different from *Greenwich*, it must be first reduced thereto, by adding or subtracting the Difference of Longitude turned into Time (at the Rate of One Hour to 15° . and One Minute of Time to 15 Minutes, or more briefly by Table XIV. Page 38, of the *Requisite Tables*) according as the Place is to the West or to the East of *Greenwich*. Example: Suppose any one should want to know the Sun's Longitude, January 19, 1767, at $4^h. 35'$ being in $21^{\circ}. 15'$ Longitude East of *Greenwich*. The Difference of Longitude turned into Time is $1^h. 25'$ which subtracted from $4^h. 35'$ because the Place is East of *Greenwich*, leaves $3^h. 10'$ for the Time re-

duced to the Meridian of *Greenwich*. The Sun's Longitude the preceding Noon is $9^{\circ}.29'.18''.2''$, and the following Noon it is $10^{\circ}.0'.19'.4''$, the Difference is, $1^{\circ}.1'.2''$, or $61'.2''$, the daily variation. Then say, as 24^h . is to $3^h.10'$, so is $61'.2''$, to $8'.3''$, which added to $9^{\circ}.29'.18''.2''$, the Sun's Longitude on the preceding Noon, gives $9^{\circ}.29'.26'.5''$, the Sun's Longitude at the Time given. In like Manner any other of the following Articles is to be found by the Help of the *Ephemeris*.

The Sun's Longitude serves also to compute the Aberration of the fixt Stars and Planets.

The Sun's right Ascension in Time is useful to the practical Astronomer in regular Observatories, who adjusts his Clocks by sidereal Time. It is also useful to him for converting apparent into sidereal Time; as suppose that of an Eclipse of Jupiter's Satellites, in order to know at what Time it may be expected to happen by his Clocks: For this Purpose the Sun's right Ascension at the preceding Noon, together with the Increase of right Ascension from Noon, must be added to the apparent Time of the Phenomenon set down in the *Ephemeris*.

The Sun's right Ascension in Time serves also to compute the apparent Time of a known Star's passing the Meridian: Thus, subtract the Sun's right Ascension in Time at Noon from the Star's right Ascension in Time, the Remainder is the apparent Time of the Star's passing the Meridian nearly; from which the proportional Part of the daily Increase of the Sun's right Ascension for this apparent Time from Noon being subtracted, leaves the correct Time of the Star's passing the Meridian.

Hence the apparent Time may be found from an observed Altitude of a known fixt Star, suppose one contained in Page 7, of the *Requisite Tables*; as will be explained hereafter.

The Sun's right Ascension in Time is also useful for computing the Time of the Moon and Planets passing the Meridian, as will be shewn under their proper Articles.

The Sun's Declination is necessary to find the Latitude, whether at Sea or Land, from the Meridian Altitude observed; it is also requisite for finding the Latitude from Two Altitudes observed with the Interval of Time measured by a Watch; it serves for computing the Sun's Azimuth, having his Altitude and the Latitude of the Place given, in order to find the Variation of the Compass; it is required, jointly with the Latitude of the Place and the Sun's horary Angle, to compute his Altitude, if neglected to be observed at the Time of taking the Moon's Distance from the Sun for finding the Longitude, being useful to facilitate the Calculation of the Effect of Refraction and Parallax upon the Distance; it is also necessary to calculate the apparent Time from an observed Altitude of the Sun at a Distance from the Meridian, the Latitude being given; or to compute the Time of the Sun's Setting or Rising; which, though a less accurate Method than the former of obtaining the Time, may yet be useful when that cannot be had. For any of these Purposes the Sun's Declination must

be found to the Time given nearly, reduced to the Meridian of *Greenwich*, making Proportion according to the daily Increase or Decrease, in like Manner as was shewn with respect to the Sun's Longitude.

The Equation of Time is a Correction, which added to, or subtracted from the apparent Time (according to its Title at the Top of the Column) gives equated or mean Time, or that which should be shown by a good Clock or Watch. Apparent Time is that which takes its Beginning from the Passage of the Sun's Center over the Meridian of any Place; and had the Sun no Motion in the Ecliptic, or was his Motion reduced to the Equator or in right Ascension uniform, he would always return to the Meridian after equal Intervals of Time. But his apparent Motion in the Ecliptic being continually varying, and his Motion in right Ascension being rendered further unequal on account of the Obliquity of the Ecliptic to the Equator, from these Causes it arises that the Intervals of his Return to the Meridian become unequal, and the Sun will gradually come too slow or too soon to the Meridian for an equable Motion, such as that of Clocks and Watches ought to be.

This Retardation or Acceleration of the Sun's coming to the Meridian is called the Equation of Time, and is contained in the last Column but One of Page II. and when applied according to its Title to the apparent Time, or that deduced immediately from the Sun, gives the mean or equated Time, whence the Error of a Clock or Watch may be found, and, if required, it may be corrected.

If it be proposed to convert mean Time into apparent, this is done by a contrary Process, by applying the Equation of Time to the mean Time given, with its Title or Sign changed; viz. subtracting instead of adding, and adding instead of subtracting.

The Equation of Time being set down in the *Ephemeris* for Noon at *Greenwich*, Proportion must be made, according to the daily Difference, to find what it should be at any given Time reduced to the same Meridian, as in the preceding Articles. The last Column of this Page, containing the daily Differences of the Equation, is designed for this Purpose.

As often as it may be required to make any Calculations from astronomical Tables, and the Time given be apparent Time; it is necessary first to apply the Equation of Time thereto to convert it into mean Time, the Tables being disposed according to mean Motions. Thus the Articles contained in the *Ephemeris* answering to Noon were computed to 0^h. increased, or 24 Hours of the preceding Day diminished, by the Equation of Time: And the Moon's places set down for Midnight were computed to 12^h. increased or diminished by the Equation of Time.

What has been shewn concerning the Equation of Time chiefly respects the Astronomer, the Mariner having nothing to do with it in computing his Longitude from the Moon's Distances from the Sun and Stars observed at Sea with the Help of the *Ephemeris*, all the

Calculations thereof being adapted to apparent Time, the same which he will obtain by the Altitudes of the Sun or Stars in the Manner hereafter prescribed.

But if Time-keepers should be brought into Use at Sea, the apparent Time deduced from an Altitude of the Sun must be corrected by the Equation of Time, and the mean Time found compared with that shewn by the Watch; the Difference will be the Longitude in Time from the Meridian by which the Watch was set, as near as the Going of the Watch can be depended upon.

The Equation of Time is computed by taking the Difference of the Sun's true right Ascension and his mean Longitude corrected by the Equation of the Equinoxes in right Ascension, and turning it into Time at the Rate of 1' to 15'. &c. The Equation of Time will be additive or subtractive as the Sun's true right Ascension is greater or less than his mean Longitude so corrected.

The Time of the Sun's Semidiameter passing the Meridian, Page III. serves to reduce an Observation of a Transit of the preceding or subsequent Limb over the Meridian to that of the Center, when only One was observed. It signifies a Portion of apparent Time, or even mean Time, the Difference being absolutely insensible upon so small an interval. It is found thus: Increase the Sun's Semidiameter in the Ratio of the Cosine of his Declination to the Radius, to find his Semidiameter in right Ascension,* which turned into Time at the Rate of 1' to 15'. and 1" to 15" gives the Time required. The Sun's Semidiameter in right Ascension is readily found by adding the Log. Cosine of his Declination to the logistic Logarithm of his Semidiameter, the Sum is the logistic Logarithm of his Semidiameter in right Ascension; which divided by 15 gives the Time of his Semidiameter passing the Meridian. If the Clock by which the Observation is made be regulated according to the sidereal Time, this Quantity must be increased in the Ratio of 365 to 366, if great Precision is required. From the Time of the Sun's Semidiameter passing the Meridian may also be found the Time of its passing the horizontal or vertical Wire of a Quadrant or Sextant, which on some Occasions may have its Use.

The Semidiameter of the Sun, is necessary to reduce the observed Altitude of his upper or lower Limb to that of the Center; also to reduce the observed Distance of the Moon's nearest Limb from the Sun's nearest Limb to the Distance of the Centers. It is also useful to Astronomers to verify or ascertain the Exactness of the Scale of their Micrometers, by Comparison with the Measure of the Sun's horizontal Diameter. This Practice is particularly useful in solar Eclipses, when the Distance of the Cusps or the Verse Sine of the uneclipsed Part has been measured with the Micrometer. The Semidiameters of the Sun in *Mayer's Tables*, on which all the Calculations respecting the Sun and Moon are made, suppose the Semidiameter at the mean Distance to be 16'. 2", 8. which *Mr. Mayer* says he deduced from above 130 Observations taken with his Six Feet mural Quadrant, which seemed to him not ill adapted to the Purpose. It may not be amiss to take this

Opportunity to remark, that the Quadrant here mentioned was given to the *University of Gottingen* by his late Majesty, and was made by that ingenious Artist the late Mr. *John Bird* after the Model of the Eight Feet mural Arch, which he finished for the *Royal Observatory* at *Greenwich*, and put up there in the Year 1750. Mr. *Mayer* made his Observations with his Six Feet mural Arch, from the Year 1756, to the Time of his Decease; with it he settled the mean Obliquity of the Ecliptic to the Beginning of the Year 1756, at $23^{\circ}.28'.16''$, which Dr. *Bradley* settled by his Observations, reduced to the Year 1750, at $23^{\circ}.28'.18''$. The Difference is agreeable to what ought to arise from the gradual Diminution of the Obliquity of the Ecliptic at the Rate of about $\frac{1}{2}$ a Second in a Year. The same Instrument he also used in settling the Elements of his solar Tables; and it is most probable that with the same he settled his Table of Refractions at the End of his solar Tables; the Agreement of this Table with Dr. *Bradley's*, see Page 1st of *Requisite Tables* (being both suited to the same Temperature of the Air) is so great, that they seem rather like One and the same than Two different Tables.

The hourly Motion of the Sun is useful in computing solar and lunar Eclipses; also in correcting the assumed Longitude of the Ship, in order to find the Time from an Observation of the Distance of the Moon from the Sun, independent of the Distances contained in the *Nautical Ephemeris*; See *British Mariner's Guide*, Page 49, and Table at the End of the same, Page 25. The Logarithm of the Sun's Distance is useful in the Calculation of the Places of the Planets and Comets. The Place of the Moon's Node signifies its mean Longitude, and is necessary for finding the Equation of the equinoctial Points both in Longitude and right Ascension, the Equation of the Obliquity of the Ecliptic, and the Deviations of the fixed Stars in right Ascension and Declination.

The Eclipses of Jupiter's Satellites are well known to afford the readiest, and for general Practice the best Method of settling the Longitudes of Places at Land; and it is by their Means principally that Geography has been so much reformed within a Century past, and the Position of the most distant Places determined with equal Accuracy to the nearest. It was hoped that some Means might be found of using proper Telescopes on Shipboard to observe these Eclipses; and could this be effected, it would be of great Service in ascertaining the Longitude of a Ship from time to time. In my Voyage to *Barbadoes*, under the Direction of the COMMISSIONERS OF LONGITUDE, in 1763 I made a full Trial of the late Mr. *Irwin's* Marine Chair proposed for this Purpose, but could not derive any Advantage from the Use of it; and, considering the great Power requisite in a Telescope for making these Observations well, and the Violence as well as Irregularities of the Motion of a Ship, I am afraid the complete Management of a Telescope on Shipboard will always remain among the Desiderata. However, I would not be understood to mean to discourage any

Attempt founded upon good Principles to get over this Difficulty.

The Telescopes proper for observing the Eclipses of Jupiter's Satellites, are common refracting Telescopes from 15 to 20 Feet, reflecting Telescopes of 18 Inches or Two Feet focal Length, and Telescopes of Mr. *Dollond's* Construction with Two Object Glasses from 5 to 10 Feet; or, which are still more convenient, those of 46 Inches focal Length, constructed with Three Object Glasses, which are as manageable as reflecting Telescopes, and perform as much as those which he makes of 10 Feet with Two Object Glasses.

The Eclipses of Jupiter's Satellites are observed by Astronomers at Land, as well in order to provide Materials for improving the Theories and Tables of their Motions, as for the sake of Comparison with the corresponding Observations which may be made by Persons in different Parts of the Globe, whereby the Longitude of such Places will be accurately ascertained. It is indeed to be lamented that Persons, who visit distant Countries, are not more diligent to multiply Observations of this Kind; for want of which, the Observations made by Astronomers in established Observatories lose Half their Use, and the Improvement of Geography is retarded. But it is to be hoped that an Emulation will spring up among those who may have Opportunities of rendering so useful a Service to the Public, to incite them to watch diligently for the Occasions of observing these Eclipses carefully, particularly of the First and Second, which are most exact for the purpose. The Eclipses, carefully calculated and set down in the *Ephemeris*, will serve to advertise them and Observers in general of the Times when they should attend to these Observations. The Person, who shall be under any Meridian different from *Greenwich*, must turn his Difference of Longitude into Time: See *Requisite Tables*, Page 38, and add it to or subtract it from the Time of the Eclipse set down in the *Ephemeris*, according as he is to the East or West of *Greenwich*, to find the apparent Time at which the Eclipse will happen at his Meridian, nearly. He must further take care to regulate his Watch or Clock by apparent Time or at least to know the Difference, as well in order to apprize him of the Time to look out for the Eclipse, as for ascertaining the apparent Time exactly at which he shall observe it. Equal Altitudes of the Sun or Stars taken with an Astronomical Quadrant afford the best Means of regulating Clocks and Watches for occasional Observations; or they may be taken with a *Hadley's* Quadrant, by Reflection from a Basin of Water or Quick-silver, or from the Horizon of the Sea, if the Observer has an open Prospect, and is not elevated above 5 or 600 Feet above the Level of the Sea. But, if Opportunity does not admit of taking equal Altitudes, the Time may be determined from One Altitude taken in any of the Methods above-mentioned, at least Two or Three Points of the Compass distant from the Meridian, but the nearer to the East or West the better, the Latitude of the Place being known, or being found by Observations of the Meridian Altitude of the Sun or Stars made
on

on Purpose. It will be better to take several Altitudes in order to take a mean of the Results for greater Certainty. And if one Star be observed to the East and the other to the West of the Meridian, the Time will be determined with rather more Certainty. The Manner of computing the apparent Time from the Altitude of the Sun or a Star is shewn by Problems VIII. and IX. Pages 25 and 26 of the Explanation and Use of the *Requisite Tables*.

The Observer, being in a Place whose Longitude is well known, should be settled at his Telescope Three Minutes before the expected Time of an Immersion of the first Satellite; Six or Eight Minutes before that of the second and third Satellites; and a Quarter of an Hour or more before that of the fourth Satellite; chiefly on account of the Uncertainty of their Theories; but if the Longitude of the Place is very uncertain, he must begin to look out for the Eclipse proportionably sooner: Thus, if the Longitude of the Place is uncertain to 3 Degrees, answering to 12 Minutes of Time, he ought to fix himself to his Telescope 12 Minutes sooner than is mentioned above. Nevertheless, when he has observed one Eclipse of any Satellite, and thereby found the Error of the Tables, he may allow the same Correction to the Calculations of the *Ephemeris* for several Months, which will advertise him very nearly of the Time of expecting the Eclipses of the same Satellite, and dispense with his attending so long.

The Immersions signify the Instant of the Disappearance of the Satellite by entering into the Shadow of Jupiter; and the Emersions signify the first Instant of its Appearance at coming out of the same. They generally happen when the Satellite is at some Distance from the Body of Jupiter, except near the Opposition of Jupiter to the Sun, when the Satellite approaches nearer to his Body. Before the Opposition of Jupiter to the Sun the Immersions and Emersions happen on the West Side of Jupiter, and after the Opposition on the East Side; but, if an Astronomical Telescope be used, which reverses Objects, the Appearance will be directly the contrary. Before the Opposition, the Immersions only of the first Satellite are visible; and after the Opposition, the Emersions only. The same is generally the Case with respect to the second Satellite; both the Phenomena of the same Eclipse are frequently observable in the Two outer Satellites. The Immersions and Emersions marked with an Asterisk in the *Ephemeris*, are those visible at *Greenwich*.

To know if an Eclipse will be visible in any Place, find whether Jupiter be 8°. above the Horizon of the Place, and the Sun as much below it. This may be done near enough by a celestial Globe: Otherwise, the Time of the Sun's Rising and Setting may be found for any Latitude by a Table of semidiurnal Arcs, contained in the popular Book called *The Mariner's Compass Rectified*, and many other Books; the Time of Jupiter's Rising and Setting may also be found from the Time of his passing the Meridian and Declination set

down in the *Ephemeris*, with the Help of the same Table of semi-diurnal Arcs; adding or subtracting the semidiurnal Arc answering to the same Declination of the Sun: Remembering always, that if Jupiter's Declination and the Latitude of the Place are of the same Denomination, the semidiurnal Arc will be more than Six Hours, and if they are of contrary Denominations, will be less than Six Hours. But it may be easier found whether the Eclipse will be visible at *Greenwich*, or whether it should be properly marked with an Asterisk, By the Tables, Page 28---31, annexed to the *Nautical Almanac* of 1772.

The Immersion or Emerfion of any Satellite being carefully observed in any Place according to apparent Time, the Longitude from *Greenwich* is found immediately by taking the Difference of the Observation from the corresponding Time shewn in the *Ephemeris*, which must be turned into Degrees, &c. by *Requisite Tables*, Page 38; and will be East or West of *Greenwich*, as the Time observed is more or less than that of the *Ephemeris*.

Example; Suppose an Emerfion of the first Satellite should be observed at the *Cape of Good Hope*, May 9, 1767, at $10^h. 46'. 45''$ apparent Time: The Time by the *Ephemeris* being $9^h. 33'. 12''$ the Difference is $1^h. 13'. 33''$, whence the Longitude of the *Cape* should be $18^{\circ}. 23'. 15''$ East of *Greenwich*, because the Time supposed to be observed at the *Cape* is more than that of the *Ephemeris*.

It is to be observed that a correspondent Observation of an Eclipse of a Satellite of Jupiter, made under a well-known Meridian, is to be preferred to the Calculations of the *Ephemeris* for comparing with an Observation made in a Meridian whose Longitude is required; but if no corresponding Observation can be obtained, as is frequently the Case, it will be best to find what Correction the Calculations of the *Ephemeris* require by the nearest Observations to the given Time that can be obtained; which Correction applied to the Calculation of the given Eclipse in the *Ephemeris*, renders it almost equivalent to an actual Observation.

The Longitudes and Latitudes of the Planets, Page IV. serve to know where to look for them in the Heavens, and when their Places may be conveniently settled by comparing them with fixed Stars by the Help of a Micrometer in a Telescope. They also shew when they are in the most important Points of their Orbits, where it is most material to observe them. They also serve to enable Persons less skilled to distinguish them from the fixed Stars. Their Declinations and the apparent Times of their passing the Meridian are particularly useful to Astronomers who are furnished with Quadrants and Transit Instruments well fixed in the Meridian, in setting their Instruments for observing their right Ascensions and Declinations.

The apparent Time of a Planet's passing the Meridian may be computed thus; the Planet's Right Ascension being calculated from its Longitude and Latitude, and turned into Time, subtract the Sun's right Ascension at Noon in Time from it, to find the Time of the

Planet's passing the Meridian nearly, which call T ; take the Difference of the $\odot$ and Planet's daily Variations in right Ascension in Time, if the Planet is progressive in right Ascension, or the Sum, if it is retrograde, which call X ; then say, by the Rule of Proportion;

As $24^h \mp X : T :: X : e$ and $T \pm e$ will be correct Time of the Planet's passing the Meridian. The upper Signs are to be used both to X and e if the Planet's progressive Motion in right Ascension be greater than that of the Sun; in any other Case the lower Signs are to be made Use of.

But perhaps it may be found more readily by continual Approximation as follows: Take the proportional Part of the Difference or Sum of the $\odot$ and Planet's daily Motion in right Ascension, answering to the Time of the Planet's passing the Meridian, found nearly, in Proportion to 24^h . and take a further like proportional Part of this proportional Part; and again of this last, and so on as far as is necessary. The Sum of all these proportional Parts added to the Time of the Planet's passing the Meridian found nearly, if the Planet's progressive Motion in right Ascension is greater than that of the Sun, otherwise subtracted, gives the apparent Time of the Planet's passing the Meridian.

Example: Let it be required to find the Time of the Moon's passing the Meridian, July 1, 1767.

The Sun's right Ascension in Time July 1st is, $6^h.40'.25''$ and July 2d, $6^h.44'.33''$ by the *Ephemeris*. Therefore his daily Motion in right Ascension is $4'.8''$. The Moon's right Ascension July 1st at Noon by the *Ephemeris* is $159^\circ.2'$ answering to $10^h.36'.8''$ of Time, and July 2d is, $169^\circ.39'$ answering to $11^h.18'.36''$. The Difference is, $42'.28''$ of Time, from which $4'.8''$ being subtracted, leaves $38'.20''$. Subtract $6^h.40'.20''$ the Sun's right Ascension July 1st at Noon, from $10^h.36'.8''$ the Moon's right Ascension the same Noon, the Remainder $3^h.55'.43''$ is the Approximate Time of the Moon's passing the Meridian. The proportional Part of $38'.20''$ answering to this, is $6'.17''$, and the proportional Part of $6'.17''$ is $9''$; therefore $6'.17''$ and $9''$ or $6'.26''$ added to $3^h.55'.43''$ give $4^h.2'.9''$ the apparent Time of the Moon's passing the Meridian. In the *Ephemeris* it is $4^h.2'$. It may also be computed by taking the Difference of the Moon's right Ascension at Noon and Midnight, but then Half the Sun's daily Variation in right Ascension must be made use of, and Proportion must be made for 12 instead of 24 Hours: and if the Moon passed the Meridian after Midnight, the Sun's right Ascension at Midnight must be used, which is a Mean between his right Ascensions on the preceding and subsequent Noon. For the Planets, it will be sufficient to take the first proportional Part only.

The Days of the Oppositions, Quadratures, &c. of the Planets to the Sun, are Times at which they ought to be observed in fixed Observatories, for settling the Elements of their Orbits by a Series of several Years Observations.

The Vth, VIth, VIIth, VIIIth, IXth, Xth, and XIth Pages of each Month contain the Moon's Place, and all the Circumstances relating to her Motion, and her Distances from the Sun and proper Stars, from which her Distance should be observed for finding the Longitude at Sea. The Longitude, Latitude, and Declination of the Moon, and Time of her passing the Meridian, afford the like Uses with the same Circumstances of the Planetary Motions, and many more besides. For the sake of greater Precision, the Moon's Longitude, Latitude, Right Ascension, Declination, Semidiameter, horizontal Parallax, with its proportional Logarithm, are computed Twice a Day, to Noon and Midnight, and may readily be inferred to any intermediate Time with the greatest Exactness.

Example: Let it be required to find the Moon's Longitude and Latitude, &c. July 16, 1767, at 16^h. 22'. 16".

First to find the Longitude.

The Moon's Longitude, July 16, at 12^h is 0°. 6'. 40". 25" and July 17 at Noon, 0°. 13'. 47". 48" the Difference 7°. 7'. 23" is the Moon's Motion in 12 Hours; say then, by the Rule of Proportion.

As 12^h is to 4^h. 22'. 16" (the Excess of 16^h. 22' 16" above 12^h) so is 7°. 7'. 23" to 2°. 35'. 41" but this must be corrected on account of the Moon's unequal Motion in 12 Hours, by the Table of Equation of second Difference annexed to Mr. Taylor's *Sexagesimal Table*, Page 244---247: for this Purpose take out of the *Ephemeris* the Two Longitudes of the Moon next preceding the given Time, and the Longitudes immediately following it, and set them down in Order one after another, as follows;

	D's Long. by the <i>Ephemeris</i> .	1st Diff.	2d Diff.	Mean of 2d Dif.
1767				
July 16, Noon	11. 29. 29. 34	0. 10. 51		
Midnight	0. 6. 40. 25		3. 28	
17, Noon	0. 13. 47. 48	7. 7. 23	3. 44	3. 36
Midnight	0. 20. 51. 27	7. 3. 39		

Take their Differences, 7°. 10'. 51", 7°. 7'. 23", 7°. 3'. 39"; take the Differences of these Differences, or the second Differences 3'. 28", 3'. 44"; and take their Mean which is 3'. 36". Now look for the Equation of second Difference, answering to 4^h. 22' after Midnight, found on the Side, and 3'. 36" at Top, which will be found = 24", and which, according to the Remark at the Bottom of the Table, must be added to 2°. 35'. 41", the first proportional Part, because the Motion in 12 Hours or first Differences are decreasing; the Sum 2°. 36'. 5" added to 0°. 6'. 40". 25", the Moon's Longitude at Midnight, gives 0°. 9°. 16'. 30", the Moon's true Longitude, and is as correct as the Longitudes from which it is deduced.

N. B. If the first Differences of the Four Longitudes of the Moon taken out first increase and then decrease, or, vice versâ, first decrease and then increase, take Half the Difference of the Two second Differences for the Mean second Difference, with which take out the Equation of second Difference, and add or subtract it as the First first Difference is greater or less than the Third first Difference.

To find the Moon's Latitude.

Take out of the *Ephemeris* the Two Latitudes preceding and Two following the given Time, and set them down in Order, and take their first and second Differences, and the mean of the Two second Differences; find the proportional Part of the Middle first Difference answering to the Hours and Minutes, &c. of the given Time after Noon or Midnight; which correct in the following Manner: Entering Table of Equation of second Difference, Page 244---247, with the Hour from Noon or Midnight on the Side, and the Mean second Difference at Top, take out the corresponding Number of Seconds, which added to or subtracted from the proportional Part found above, according as the Motion in 12 Hours or first Difference is decreasing or increasing; or, more generally, according as First first Difference is greater or less than Third first Difference, gives the proportional Part corrected; which now added to or subtracted from the Moon's Latitude at the preceding Noon or Midnight, as the Latitude in these 12 Hours is increasing or decreasing, gives the Moon's Latitude correct.

Example: The Moon's Latitude is required, July 16, 1767, at 16^h. 22'. 16".

	D's Lat. by the <i>Ephemeris</i> .	1st. Dif.	2d Dif.	Mean of 2d Dif.
1767,				
July 16, Noon	0° 31'. 10" N.	18'. 26"	' "	' "
Midnight	4°. 49'. 36"	13'. 50"	4'. 36"	4°. 40'
17, Noon	5°. 3'. 26"	9'. 6"	4'. 44"	
Midnight	5°. 12'. 32"			

The Moon's Latitude July 16 at Midnight being 4°. 49'. 36" N. and the Motion in the next 12 Hours being 13'. 50" say by Proportion,

As 12^h is to 4°. 22'. 16", so is 13'. 50" to 5'. 2": but this must be corrected by adding 32", the Equation of second Difference, answering to the Hour 4^h. 22', and the Mean second Difference 4'. 40", because the first Differences are decreasing, or rather because the first of them 18'. 26", is greater than the last of them 9'. 6", therefore the proportional Part corrected is 5'. 2" + 32" = 5'. 34", which added to 4°. 49'. 36", gives 4°. 55'. 10" N. the Moon's Latitude correct.

Remarks on some Circumstances necessary to be attended to, in order to obtain and apply the Correction of second Differences rightly in computing the Moon's Latitude.

I. If the Moon's Latitude taken out of the *Ephemeris* for Noon and Midnight changes its Denomination from North to South or from South to North, the Sum of the Two Latitudes of contrary Denominations, where the Change happens, is to be accounted the first Difference in that Place.

II. If the Three first Differences first increase and then decrease, or vice versa, first decrease and then increase, Half the Difference of the Two second Differences is to be taken for the Mean second Difference.

III. If the Series of Four Latitudes taken out should first increase and then decrease about the Moon's greatest Latitudes, take the Sum of the Two first Differences standing on each Side of the greatest Latitude for the second Difference in that Place; correct the Moon's Latitude at Noon or Midnight by the simple proportional Part first found; and to the Latitude so corrected, add always in this Case the Equation of second Difference from Page 244---247, answering to the Mean second Differences.

Before I quit this Subject of Interpolation by second Differences, I shall point out another Method, by which the same End may be obtained more readily, and with fewer Rules, by those who are well acquainted with algebraic Subtraction and Addition, and the Manner of applying the Signs in those Operations. Subtract each Latitude from the following for the first Differences, to which prefix the Sign— if the Latitudes decrease; and subtract each first Difference, thus found, from the following one of the same Order for the second Differences. Half the Sum of the Two second Differences standing on each Side of the Interval to be interpolated, is to be accounted the Mean second Difference; the Equation corresponding to it by Table, Page 244---247, is to be applied always with the contrary Sign.

These Operations are to be performed, and the Signs to be applied as in algebraic Subtraction and Addition. Note further, if the four given Latitudes change their Denomination, call the second Latitude +, and those of a contrary Denomination—.

The Moon's Declination may be found at any Hour in the same Manner as her Latitude; but as the Correction arising from second Differences will never exceed $2\frac{1}{2}$, this may be neglected on most Occasions; but if any one is desirous to obtain the Declination true to a Minute, the Correction is easily applied, as shewn above.

The other Articles of Page VI. and VII. *viz.* the Moon's Right Ascension, her Semidiameter, horizontal Parallax, with its proportional Logarithm, and the Distances contained in the Four last Pages of the Month, may be all found correctly by even Proportion, without requiring any Allowance on account of second Differences. The proportional Part of the Moon's Longitude, &c. for any Hour may be found very readily by the Help of the Table of proportional Logarithms, Page 39—55 of the *Requisite Tables*.

The Moon's Longitude and Latitude are used in computing her Distances from the Sun and Stars contained in the Four last Pages of

the Month, as well as in the Appulses to Stars pointed out in Page I, and, jointly with her Parallax and Semidiameter, are necessary for computing the Eclipses of the Sun and Moon, and the Occultations of fixt Stars and Planets by the Moon. They also facilitate the Calculation of the Longitude of any Place from an observed Eclipse of the Sun, or Occultation of a Star or Planet by the Moon: Or, if the Meridian be well known, the Parallax and Semidiameter serve to deduce the Moon's true Place in the Heavens from the Observation, which compared with that given by the *Ephemeris* shews the Error of the Tables at the Time. The Moon's Semidiameter and Parallax are applied in correcting almost all Observations of the Moon. The proportional Logarithms of the Moon's Parallax serve further to facilitate the Calculations of Parallaxes.

The Moon's right Ascension and Declination are useful to compute her Altitude at any Time, particularly at the Observation of her Distance from the Sun or a Star, supposing it was neglected to be or could not be observed properly; which latter Case may sometimes happen in the Night, though I think but rarely; the utmost Accuracy therein not being required for the Calculations of Refraction and Parallax. See *British Mariner's Guide*, Page 57 and *Requisite Tables*, Page 24. The Moon's Declination, with her Semidiameter and Parallax, serve for finding the Latitude by the Meridian Altitude of her upper and lower Limb observed at Sea. See *British Mariner's Guide*, Page 93, and *Requisite Tables*, Page 15. The Moon's right Ascension and Declination serve also to compute the Time from her Altitude observed at the Observation of her Distance from a Star; whence the Longitude may be inferred, tho' no Altitude of the Sun or a Star was taken for regulating the Time. See *British Mariner's Guide*, Page 61, and Mr. Edwards's 5th Problem annexed to the *Nautical Almanac* of 1781, Page 10.

The Distances of the Moon from the Sun and fixed Stars, contained in the VIIIth, IXth, Xth and XIth Pages of the Month are set down to every Three Hours of apparent Time by the Meridian of *Greenwich*, and are designed to relieve the Mariner from the Necessity of a Calculation, which he might think prolix and troublesome, and to enable him, when compared with the Distance observed carefully at Sea, to infer his Longitude readily and with little Danger of Mistake to a Degree of Exactness that may be thought sufficient for most nautical Purposes. But useful and valuable as the Practice of this Method may be at present, it is a Remark not unworthy our Notice, that every future Improvement of the Lunar Tables, as well as the Instruments, will bring it nearer and nearer to Perfection.

The Moon's Distances are computed both from the Sun and proper Stars, and generally from One Object on each Side of her, to afford the Mariner a greater Number of Opportunities of Observation, and a Means of attaining a greater Degree of Exactness. The Distances from the Sun are computed between 40° and 120° of Distance. While the Moon is between the Distances of 20° and 40° from the Sun, her Distance is computed only from a Star on the contrary Side

that the Sun is. When she is between the Distances of 40° and 90° from the Sun, her Distance is computed both from the Sun and from a Star on the contrary Side to the Sun; when the Moon is above 90° from the Sun her Distance is computed from Two Stars, one on each Side of her; though still, her Distance is computed also from the Sun from 90° to 120° . Though the Distance of the Moon from the Sun or Star, well observed with a good Instrument, is sufficient to determine the Longitude, with the Help of the *Ephemeris*, always within a Degree, and generally much nearer, yet it will conduce to still greater Accuracy, if the Observer takes the Distance of the Moon from Two Stars, or the Sun and a Star, or, when the Moon is between 90° and 120° Distance from the Sun, from the Sun and Two Stars, if he can be so lucky as to obtain these several Observations.

The Longitude being computed from the Observations made with each Star respectively, the Mean of the Results is to be taken as probably approaching nearest to the true Longitude. In particular the Moon's Distance should be taken from Two Stars, or the Sun and a Star on each Side of her, as often as Opportunity permits, since the Mean of the Results will probably be at least as exact again as either separately, I mean as far as depends on any Imperfection of the Instruments, and unavoidable small Errors arising in the Use of them; Errors of these Kinds having a natural Tendency to correct each other; for that small Error which arises from the Lunar Tables will affect the Result from either Star equally. But the Error of *Mayer's* last Lunar Tables as corrected from a series of Dr. *Bradley's* Observations of 9 Years by Mr. *Charles Mason* in 1778, being these made use of for the *Nautical Almanac* of 1789, and the subsequent ones, probably never exceeding $30''$, the Uncertainty hence arising in the Determination of the Longitude, can scarcely ever exceed 17 Miles of Longitude, and generally will be much less.

The Distances set down in the *Ephemeris*, afford the Observer a ready Means of knowing the Star from which the Moon's Distance is to be observed; for he has nothing to do but to set his Quadrant to the Distance computed roughly from the *Ephemeris*, neglecting the Seconds, at the apparent Time estimated nearly by the Meridian of *Greenwich*; and direct his Sight to the East or West of the Moon, according as the Distance at *Greenwich* is found in the VIIIth and IXth, or Xth and XIth Pages of the Month; and having found the Moon upon the little Speculum, let him give a Sweep with the Quadrant to the Right and Left, and he will find the Star he seeks for, if above the Horizon and the Air be clear, nearly in a Line perpendicular to the Line of the Moon's Horns or longer Axis, or, which is the same Thing, in the Line of the Moon's shorter Axis produced. The Star is always one of the brightest, so that there is little Danger of mistaking another for it, if the preceding Directions are carefully observed. The Time at *Greenwich* is estimated nearly by turning the supposed Longitude from *Greenwich* into Time, by *Requisite Tables*, Page 38,

and adding it to or subtracting it from the apparent Time at the Ship, as its Longitude is West or East of *Greenwich*. It will be sufficient if the Distance be computed from the *Ephemeris* within 10, or 20', for setting the Quadrant. The principal Use of the Distances of the Moon from the Sun and fixt Stars; namely, in determining the Longitude by Comparison with the corresponding Distances observed at Sea, is shewn in Problem XI. Page 37 of *Requisite Tables*.

The Distances contained in the *Ephemeris* were computed strictly to Noon and Midnight, and thence interpolated for every Three Hours, according to the Method shewn for computing the Moon's Latitude, Page 157---158; except that the Correction of second Differences at the Middle of the Interval to be interpolated, was taken $\frac{1}{3}$ of the Mean of the Two second Differences, and at the First and Third Quarter of the Interval was taken $\frac{3}{4}$ of the Correction just found at the Middle of the Interval; instead of consulting Mr. *Taylor's* Table, Page 248 and 249, which would however have given the same Result. But, at the first 12 Hours, when the Distances of the Moon from a Star begin, and the last 12 Hours, when the Distances end, there being only One second Difference instead of Two second Differences on each Side to take a Mean of, this Method fails in these Cases, and therefore the following is to be substituted in its Stead, being derived from Sir *Isaac Newton's* Solution of the Problem of drawing a Curve through the Extremities of any Number of given Ordinates. *Phil. Nat. Princ. Math.* Page 486. Edit. *Londini* 1726, or Dr. *Horsley's* complete Edition of Sir *Isaac Newton's* Works, Vol. 3d. Page 128.

From Four Distances at Noon and Midnight computed strictly to interpolate Three Distances at the III^d, VIth, and IXth Hour of the first or last Interval.

† Subtract each Distance from the following, for the first Difference, and prefix the Sign —, if the Distances decrease. Subtract each first Difference thus found from the following One of the same Order, for the second Difference: And in like Manner subtract the First second Difference from the following for the third Difference; applying the Signs as in algebraic Subtraction. Denote the first or last first Difference by b ; the first or last second Difference by c , according as the Interpolation to be made is for the first or last 12 Hours; denote also the third Difference by d ; and, a being put to signify the Distance at the Beginning of the Interval, the interpolated Distances will be as follows:

$$\begin{array}{l} \text{At III^d Hour of first Interval} \quad a + \frac{1}{4}b - \frac{3}{32}c + \frac{7}{128}d \\ \text{At VIth Hour of first Interval} \quad a + \frac{1}{2}b - \frac{1}{8}c + \frac{1}{16}d \\ \text{At IXth Hour of first Interval} \quad a + \frac{3}{4}b - \frac{1}{2}c + \frac{1}{8}d \end{array}$$

Or,

$$\begin{array}{l} \text{At III^d Hour of last Interval} \quad a + \frac{1}{4}b - \frac{3}{32}c - \frac{7}{128}d \\ \text{At VIth Hour of last Interval} \quad a + \frac{1}{2}b - \frac{1}{8}c - \frac{1}{16}d \\ \text{At IXth Hour of last Interval} \quad a + \frac{3}{4}b - \frac{1}{2}c - \frac{1}{8}d \end{array}$$

In adapting these Formulæ to Numbers, great Care must be taken about the right Application of the Signs. Thus if b , c , or d is Negative, apply the Number expressing the Value of that Term of the Formula where it is found with a contrary Sign to that of the Formula.

Let me add in this Place, that if in filling up the first and last Intervals, a new second Difference has been supposed in arithmetical Progression with the Two given ones, in order to take a mean between it and the first or last second Difference, the Interpolation at the Middle of the Interval or VIth Hour will be had true, the same as if the above Formulæ had been used: But at the Interpolation of the first and third Quarter there will be an Error of $\frac{1}{128}$ third Difference; which will be corrected, by applying $+\frac{1}{128}d$ or third Difference, to Number found at the first Quarter of the Interval, and $-\frac{1}{128}d$ to that found at the third Quarter of the Interval; equally the same whether it be the first or last Interval.

The Configurations of Jupiter's Satellites, Page XIIth and last, exhibit the apparent Positions of the Satellites with respect to each other, and to Jupiter at such an Hour of the Evening or Night as they are most likely to be observed, and serve to distinguish the Satellites from one another. Jupiter is distinguished by the Mark $\bigcirc$, and the Satellites by Points with Figures annexed, the Figure 1 signifying the first Satellite, 2 the second Satellite, &c. When the Satellite is approaching towards Jupiter, the Figure is put between Jupiter and the Point; and when the Satellite is receding from Jupiter, the Figure is put on the other Side of the Point. The Satellites are in the superior Parts of their Orbits, or furthest from the Earth, when they are marked to the right hand or West of Jupiter approaching him; or to the left Hand or East of Jupiter receding from him; but are in the inferior Part of their Orbits, or nearest to the Earth, when they are marked to the right Hand or West of Jupiter receding from him, or to the left or East of Jupiter approaching him. The Cypher $\bigcirc$, sometimes annexed to the Figure of the Satellite towards the Margin, signifies, that it is invisible on the Face of Jupiter; and the black Mark $\bullet$, signifies that it is invisible, being eclipsed in Jupiter's Shadow, or behind Jupiter eclipsed by his body.

THE END.



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